FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Turkey Poult Hatch Shows Sharp Increase

WASHINGTON — Although the hatch is low seasonally compared with spring months, hatchery production of turkey poults is currently showing a sharp increase over a year earlier.

This is indicated in the U.S. Department of Agriculture's latest hatchery report. Both heavy and light breeds show marked increases.

Heavy breed poult production during November was up 50% from a year earlier.

The production of heavy white breed poults totaled 823,000 in November, compared with 495,000 in November, 1957—an increase of 66%. Output of other heavy breed poults totaled 239,000—up 12% from a year earlier.

Light breed poults hatched during November totaled 630,000—up 139% from November, 1957.

The December turkey poult hatch also was expected to show an increase over a year earlier. This is indicated by number of eggs in incubators on Dec. 1.

The number of heavy white breed eggs in incubators on Dec. 1 was 1,655,000, compared with 1,068,000 a year earlier. Numbers of other heavy breed eggs were down, however. The total for Dec. 1 was 787,000, compared with 1,066,000 a year earlier.

Light breed eggs in incubators on Dec. 1 totaled 1,303,000, compared with 864,000 a year earlier.

Milk Cows Being Fed Concentrates At Record Rate

WASHINGTON — Record grain feed supplies and favorable dairy product-feed price relationships have contributed to continued record high grain and concentrate feeding to milk cows, according to the U.S. Department of Agriculture.

On Dec. 1, USDA's crop reporters in the U.S. fed an average of 6.9 lb. of grains and concentrates to cows in their milking herds—5% above the previous record of Dec. 1 last year and 12% above the 1946-57 average. Seasonally, grain feeding rates showed less than the usual increase from Oct. 1 to Dec. 1.

On Dec. 1, crop reporters in the north Atlantic and east north central states fed at the heaviest rate, averaging 7.8 and 7.7 lb. per cow, respectively. In other regions, averages were: West north central, 6.7 lb.; West, 6.4 lb.; south Atlantic, 6.2 lb.; south central, 5.7 lb. per cow. Feeding rates were well above average in all regions.

The value of grain and concentrates fed to milk cows on Nov. 15 was $2.80 cwt., the lowest for any month since April, 1946, and the lowest for November since 1945.

USDA reported that milk production on farms totaled 8,856 million pounds in November—1% above a year earlier. In the first 11 months of 1958, milk production totaled 116.7 billion pounds, compared with 117 billion in the same period of 1957.

Poultry Outlook: Bigger Output and Lower Prices

CHICAGO — "Poultry production will be up and prices will be down in 1959. If production is up as much as forecast, egg prices will average 6¢ lower January-June, and 2¢ lower July-September, compared to this last year. Higher production could also mean 1-2¢ lower turkey prices next fall, and lower broiler prices by 4-5¢ January-March, compared to 1958."

So stated the Poultry Survey Committee in its eighth report to the nation's poultry and allied industries at the conclusion of a two-day meeting in Chicago. Following is the complete report of the four outstanding college economists who comprise this committee:

EGGS: Egg prices during January-June, 1959, will average about 31¢ a dozen, 6¢ below a year earlier. July-September prices will average about 36¢, 2¢ below the same period of 1958.

Egg production is now running about 7% more than a year ago even though the number of layers on farms is up less than 1%. Egg production during the first half of 1959 will be 3% above the same period of 1958. This increase in production will be the result of a 2% larger laying flock plus a slight increase in the rate of lay.

Currently, it is estimated that the 1959 spring hatch of egg-type chicks will be down about 10% from 1958. Ordinarily, a 5% cut is needed to offset increased production efficiencies. An additional 5% cut will be required in the spring of 1959 because of the extra 25 million chicks hatched July-December, 1958. Therefore, a 10% reduction will be necessary to hold October-December, 1959, egg prices near the 37¢ level of the preceding year. If such a reduction does not occur, egg prices will average lower than 37¢ during the last quarter of 1959.

The increasing trend toward year-round hatchings of egg-type chicks is modifying the effects of year-to-year changes in the number of chicks hatched during the January-May sea-

(Turn to **POULTRY**, page 85)

NTF Will Meet in Des Moines for 20th Convention

DES MOINES, IOWA — Business meetings and advance registration Jan. 5 will open the way for the 20th National Turkey Federation Convention and Turkey Industry Exposition in Des Moines Jan. 6-8. The convention has not been held in Des Moines since 1949.

On Jan. 6 registration will continue, the exhibit hall will open at Veterans Memorial Auditorium, the National Dressed Turkey Show will be judged and there will be a special program devoted primarily to reports on results obtained in 16 research projects supported in part by grants of NTF research funds. C. N. Thurnbeck, vice president of the federation, will introduce the program. Cliff D. Carpenter, chairman of the NTF research advisory committee, will conduct the Turkey Research Clinic.

Several "kick-off" speeches are scheduled for the luncheon at noon on Jan. 6. Also on this day will be addresses on the general subject, "New Approaches to Solving Our Economic Problems." Program speakers will include Peter Crafts, Grasmere, N.H., NTF president; Ez-

(Turn to **TURKEY**, page 81)

PENB Explains Its Commodity Promotion Plan

CHICAGO—A firm stand to aggressively promote increased consumer use of eggs and poultry meat in direct proportion to financial support received from each commodity interest was announced by the Poultry and Egg National Board's board of directors at a two-day session in Chicago recently.

The policy was established to make it clear to the entire poultry industry that the directors were acting in the best interests of the industry, according to L. N. Thompson, president. "The consumer is PENB's target. Helping these consumers, not competitively-minded in their choice of food, to become more egg and poultry-meat minded is the job of a sound consumer information program. Give this approach adequate financial fuel," said Mr. Thompson, "and the results will be most rewarding."

In his opening statement to 25 board members and nine commodity committee members, Mr. Thompson called on all levels of the poultry

(Turn to **PENB**, page 85)

Bearish Influences in Grain Price Situation Pointed Out

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—A number of developments are adding up to more bearish influences in the grain market, and the outlook is bearish for all grains in the face of huge supplies.

The export situation, certain acreage and crop prospects for 1959, the prospective re-sale price for government stocks next year and the tremendous supplies, all make for a bear market outlook and a nice "kettle of fish" in handling the farm program.

Meanwhile, there are these various developments:

Perhaps over-eager short interests in the grain markets took to heart the latest Commodity Credit Corp. loan account report for Nov. 30 for grains to draw the conclusion that low impoundings of wheat, corn and soybeans for the month of November reflected a bearish situation.

(Also see story on page 8.)

Interpreters of USDA data are unwilling to accept this conclusion. They say that in the case of wheat, the loan accounts for the 1958 crop year are following almost precisely the same pattern as that in 1953. If this pattern is maintained, they say, the net total take-over of 1958-crop wheat under loan defaults by CCC next year will amount to some 500 million bushels.

More Free Wheat

For the longer range, however, USDA experts believe that the tag end of this crop year will show a free wheat market supply available

(Turn to **GRAIN**, page 85)

FEEDSTUFFS *Features This Week*

RESEARCH REPORTS: Summaries of reports on ruminant research, given at the recent American Society of Animal Production meeting, begin on **page 10**.

GOLDEN YEAR FEATURE: Fifty years of progress in sheep nutrition are reviewed on **page 18**.

AMINO ACIDS: Using amino acid values in feed formulation is the subject of a second article in a series, on **page 26**.

POULTRY RATIONS: The relation of caloric restriction during the growing period, to laying house performance of egg production-type pullets is discussed on **page 30**.

DEALER EGG PROGRAMS: Two feed dealers' egg programs, one in Nebraska and one in California, are described on **pages 50** and **58**.

— REGULAR FEATURES —

Joe Brooks	34	Bulletin Board	68
Putting Research to Work	38	Convention Calendar	70
Worth Looking Into	62	Feed Markets in Detail	82

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Happy Holiday

WHILE THE DAY'S WORK SEEMS to have an extra urgency as the end of the year approaches and the problems of the feed business don't seem anxious to take a holiday, it's high time that the signs of the season start to overtake more of our thoughts. All of the normal signs, the good-will warmth of verbal and card-conveying greetings, are welcome additions to routine business conversation and incoming mail.

Some more unusual things are appearing, too, in keeping with the time of the year. For example, among the new calendars arriving in our office is one from the Ethiopian Airlines. It is an attractively printed item and probably will find wall-space in the room of some crazy-for-airplanes youngster. But, should one wonder, is this a suggestion from some unknown source that travel to an unlikely place would be advisable? We don't know, so all we can say is Merry Christmas to you, too, Ethiopian Airlines.

It's fun, too, to note that at least one news story inevitably turns up a neat holiday-time twist. This year it is one reporting that a Charles Dickens has been elected president of a West Coast trade organization. The election couldn't have been better timed, we would say.

ON THE OTHER HAND, if we may indulge in a semi-sour observation, has anyone else noticed how much worse the seasonal songs are getting? The gimmick songs, that is. Mentioning this perhaps isn't fair to those who have been fortunate enough to avoid hearing it, but someone has turned one of the grade-school jokes about "I don't care who you are, Fatso, get those reindeer off my roof," into a tune. Is this any way to talk about our jolly friend, or for that matter, reindeer even?

And how about those unintelligible chipmunks? How did they get mixed up in the field belonging more properly to Rudolph of the red nose and the kid with the front teeth missing? Actually, this one isn't so bad, except that it is exasperating to try to figure out what they're saying when there are more important things to interpret, such as the confused requests of toddlers who wouldn't dare call Santa "Fatso." We merely wish them each two cheekfuls of filberts to put them out of singing condition in a happy state.

SO MUCH FOR THIS SORT OF COMPLAINING, which we are sure no one will regard too seriously, anyhow. It's time to get on with the important task of compiling a list of things the feed industry might want to find among this year's gift assortment.

First of all, perhaps, the list should include an item which could be labeled "opportunity." This the industry surely has in generous measure, but often its meaning is obscured by misunderstandings or confusion about where opportunity may be found. A welcome gift would be clarification of how opportunity for growth and service to agriculture can best be realized without inviting restrictions on the industry's freedom to move ahead.

Closely related to this would be a desire, that necessary competitive efforts reflect the highest standards of ethics and a sincere desire to serve feeders in the best way possible.

Feed men, too, could place on their gift list realization on the part of legislators and others that government farm programs must not inhibit the dynamic growth of the nation's capacity to produce food.

The list could be extended from these broad "wants" to the many important factors that relate to them or could help make them a reality. The list can be rounded out to suit one's individual needs.

Examination of what one really wants inevitably leads to the conclusion that to get the "gift" one must first do a great deal of giving. Such is the case here, because only by contributing a share in helping to meet the requirements of this list can the industry receive the full measure of a sound and prosperous future.

It is a big order, but with the sort of feeling one can most easily express during this holiday season, it does not seem to be a remote thought. And at this point, we wish to add, from the staff of Feedstuffs, best wishes for the holidays and the days ahead.

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Feed business remained excellent throughout most of the nation this week as feeders continued to use good programs for their consuming units. In the large midwest feeding area December may end up as the best month of the year for some mills. Indications are that most of the buying is for immediate sale. Dealers order with urgency, and the approach of the new year means dealers want to stay low on inventory for tax purposes. Dairy and beef cattle feeds are getting strong demand and hog feed demand is surprisingly good for the time of the year. The index of wholesale feedstuffs prices advanced 2.3 points this week to 91.5, the highest it has been since July 22, 1958, the U.S. Department of Agriculture reports. The feed grain index was 64.4, 0.7 point below a week earlier, but the same as a year earlier. The hog-corn ratio, based on Chicago prices, was 15.3, compared with 16.0 the same week a year earlier. (Ingredient prices in detail on pages 82-84.)

Northwest

Feed business continued at a very good volume during the past week, but some lagging of business was reported in the country. Whether this was a result of the coming holidays or a momentary breather caused by good stocking in recent days was not completely apparent.

One feed mill representative said he is convinced that the feeder is slowing down his buying in view of the rising prices for feed. This observer said he believes that more farmers are using formula feeds than ever before. Evidence of this is the very good demand for formula feeds. One representative said he "can't see a soft spot in any line of feeds when you consider sales against the time of the year."

Dairy and beef feeds are getting the bulk of the demand, but hog feeds also appear to be moving in good volume. Some representatives said poultry feeds are a little soft as a result of the present price level for eggs.

Mills are running at peak capacity to meet demand, and are generally looking forward to an outstanding sales volume in December. Continuation of present demand may set some new records, the representatives said.

Some prices will advance next week. The lists will be unchanged to up $2.

Southwest

"Busier than ever" seems to apply to the majority of formula feed mills in the Southwest this week. General line dealer business has picked up over the previous good pace. Although some of the volume may be due to dealers stocking up enough to carry them through the holiday period, several mills report that the urgency with which orders are coming in indicates that dealers are moving feed off their floors at a rapid pace. Livestock numbers are large, feeding ratios are generally pretty good and local grains are of such quality that they can be stored under government programs. These factors all seem to be contributing to the excellent business.

Hog feeds are leading the volume for many mills. Orders against cattle bookings seem to be coming in at a faster rate. Laying rations are moving well, as are dairy feeds. Although the broiler price situation is "sick," feed is still moving in good volume since birds have been put down and must be fed.

December is shaping up as the best month of the year for some mills, contrary to the usual trend. Sales departments look for pretty good business next week despite the holiday. A number of dealers don't like to have any more on hand at year end than they have to, but they want to get feed rolling to them so it is delivered very early in the New Year.

Mills will be running five to six days this week, with quite a few running six days. Order backlogs for next week range from fair to good.

Price lists will be unchanged to up as much as $2 ton. Grain prices were down slightly, but most other ingredients, especially proteins, were stronger.

Northeast

Dairy feeds led the way as formula feed sales continued to improve a little. Some manufacturers stepped up their running time slightly to meet the demand.

Dairy tonnage was about evenly divided between concentrates and complete feeds. Some of the lower-protein complete feeds have been doing very well.

Egg mashes also were well taken but broiler feeds were slow and turkey demand has dwindled to breeding flocks and some birds held over for the coming holidays.

Eggs held about steady. The market has passed its seasonal peak and little improvement is likely.

Broilers remained depressed at an average of 14¢ lb. in the East, with some slight price differentials either way.

Ingredient prices presented a mixed picture during the week, but as a whole the market still is strong.

Corn was off 1¢ and further pressure is expected after the first of the year. Feed wheat was also off 1¢ but barley and oats held unchanged.

Tallow held just about steady after its recent declines.

Soybean oil meal was firm, with 44% meal unchanged to $1 higher, and the 50% meal kept pace. Cottonseed oil meal moved in sympathy with soybean oil meal. Linseed oil meal was strong and practically unobtainable. Gluten meal held steady.

Meat scraps added another $2.50 in a strong market. Fish meal held just about steady on light offerings.

Brewers' grains were hard to find and up $1 to $1.50. Distillers' grains held unchanged. Hominy feed was unchanged to off 50¢ and alfalfa meal dragged along at the same level.

Good demand for bran propped the millfeed market. Supplies were very tight and prices advanced.

Running time of formula feed manufacturers last week averaged 40 hours, with some mills working a little beyond the average.

Southeast

Cold weather this past weekend had very little, if any, effect on the feed business. It is reported to be about the same as previous week.

Southeast Alabama reports indicate excellent dairy and hog feed business, and feed for laying hens is increasing weekly. The north Georgia broiler market remains unchanged at the 14¢ lb. level f.o.b. farms. Based

(Turn to MARKETS, page 86)

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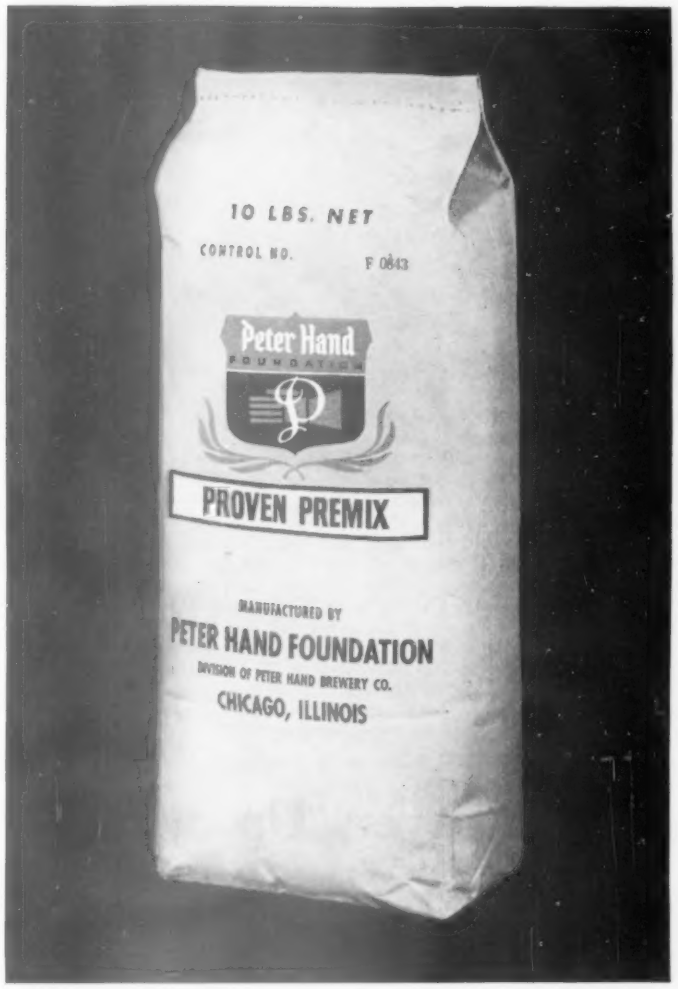

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PLAN DEHYDRATORS CONVENTION—The program for the 17th annual convention of the American Dehydrators Assn. was hammered into its final form at a meeting of ADA executives and committee members held in Kansas City recently. "A New Day for Dehy" is the theme for the 1959 convention, which will be held Jan. 29-30 at the Shamrock Hilton Hotel in Houston, Texas. An outstanding program, including college and industry specialists, is scheduled. Among the entertainment highlights will be a "South of the Border" party sponsored by suppliers to the industry. At work on the program (left to right) are: Kenneth Morrison, Morrison & Quirk, Hastings, Neb.; Ralph Beermann, Beermann Bros. Dehy, Dakota City, Neb., ADA first vice president; Henry Moeller, Sioux Alfalfa Meal Co., Vermillion, S.D.; Joseph Chrisman, ADA executive vice president; Miss Eunice Hunt, ADA secretary; R. G. Brierley, Archer-Daniels-Midland Co., Minneapolis, ADA second vice president; L. J. Schiller, Hayward, Inc., Oak Harbor, Ohio; Vernon C. Britton, V. C. Britton Co., Firebaugh, Cal. Other topics discussed at the meeting related to a revised dues structure and membership campaign.

U.S. Potential Layers Up 3%

WASHINGTON — Potential layers (hens and pullets of laying age plus pullets not of laying age) on farms on Dec. 1 totaled 366,334,000, according to the U.S. Department of Agriculture. This represented an increase of 3% over a year ago.

Numbers of potential layers were above last year in all regions of the country except the north Atlantic. Increases ranged up to 7% in the east north central states. Numbers were down 2% in the north Atlantic region. (Also see accompanying table.)

The number of layers on farms on Dec. 1 totaled 324,305,000—up 1% from a year earlier. Pullets not of laying age on Dec. 1 totaled 42,029,000—up 21% from a year earlier. This increase brought the increase in total potential layers to 3% above a year ago.

Egg Production Up

USDA reported that farm flocks laid 4,910 million eggs during November—7% more than a year earlier. The increased production was due principally to a higher rate of lay; also, weather was favorable most of the month. The increased proportion of pullets in laying flocks and the trend toward larger flocks also are important factors in the increased rate of lay.

The rate of egg production per layer nationally in November was 15.3 eggs, compared with 14.5 eggs a year earlier. This was a record high for the month.

During November, laying flocks averaged 320,183,000 layers, which represented an increase of 1% over a year earlier.

USDA noted that the average cost of the farm poultry ration in mid-November was $3.29 cwt., compared with $3.37 in October and $3.34 in November, 1957.

Prices received by farmers for eggs in mid-November averaged 38.3¢ doz., up .1¢ from a month earlier but down 7.1¢ from a year earlier. During the week ending Dec. 3, increased offerings resulted in a sharp downward trend.

Hercules Cuts Prices On BHT Antioxidants

WILMINGTON, DEL.—A price reduction of 10¢ lb. for most grades of BHT antioxidants has been announced by Hercules Powder Co., Wilmington. The new schedule became effective Dec. 15.

BHT (butylated hydroxy toluene) antioxidants are chemically described as 2,6-di-tert-butyl-p-cresol, and are marketed by Hercules under the trade name, "Dalpac."

The microground feed grade, which is used in mixed feeds and dry feed ingredients, is now quoted at 97¢ lb. in 50-lb. drums, delivered. The good grade Dalpac, for edible fats and other products, is quoted at $1.10 lb. in 100-lb. drums, delivered.

A spokesman for the firm said the reductions "are the result of economies in production brought about by Hercules' integrated position in the industry." Hercules is a basic producer of para-cresol, the intermediate for production of 2,6-di-tert-butyl-p-cresol.

Warehouse Burns

NAMPA, IDAHO—Fire of undetermined origin completely destroyed a feed warehouse and other facilities of General Mills, Inc., Dec. 10 at Nampa. The amount of the loss has not yet been determined. General Mills purchased the warehouse from the Simplot interests last spring and had remodeled it.

Hens and Pullets of Laying Age, Pullets Not of Laying Age and Potential Layers on Farms, Dec. 1

Year—	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
Hens and Pullets of Laying Age on Farms (thousands)							
1947-56 (average)	59,429	70,297	98,860	33,574	54,840	36,864	355,865
1957	56,208	63,208	87,970	33,085	44,392	36,561	321,424
1958	53,937	65,612	88,508	34,166	44,708	37,374	324,305
Pullets Not of Laying Age on Farms (thousands)							
1947-56 (average)	5,792	6,651	11,475	6,334	10,502	5,066	45,820
1957	5,523	3,407	7,257	5,945	6,625	5,912	34,669
1958	6,634	5,389	9,499	6,447	7,493	6,567	42,029
Potential Layers on Farms* (thousands)							
1947-56 (average)	65,221	76,948	110,335	39,909	67,342	41,930	401,685
1957	61,731	66,615	95,227	39,030	51,017	42,473	356,093
1958	60,571	71,001	98,007	40,613	52,201	43,941	366,334

*Hens and pullets of laying age plus pullets not of laying age.

E. F. Dickey Elected President of Honeggers' & Co.

FAIRBURY, ILL.—Sam R. Honegger has announced the election of E. F. Dickey as president of Honeggers' & Co., Inc., manufacturer of feed, prefabricated farm buildings, and livestock and poultry equipment. Mr. Honegger continues as chief executive officer as chairman of the board of directors, and Frank E. Honegger becomes vice chairman of the board.

Mr. Dickey joined Honeggers' on Jan. 1, 1949, as general sales manager. He was elected to the board of directors early in 1951 and made a vice president later that same year. In 1953, he was appointed general manager, and he was elected executive vice president in 1955.

Mr. Dickey, a native of Indiana, was graduated from Indiana Law School in 1931 with an LL.B. degree.

"He has developed a management team which during the past 10 years has seen the company's feed tonnage grow from 2,000 tons per month to a high 14,000 tons in June of this year," said Mr. Honegger. "Likewise, the firm's profits have increased many times over, and net worth has grown substantially.

"During this same time, as a means of diversifying income and stabilizing profits, the company has broadened its activities into the manufacture, sale and distribution of prefabricated farm buildings, corn cribs, grain bins, etc., and livestock and poultry equipment. Two plants have been acquired for these operations, and two additional feed mills have been purchased."

Before joining Honeggers', Mr. Dickey was executive secretary of the Illinois Feed Assn. For the past three years he has been a member of the board of directors of the American Feed Manufacturers Assn.

Commenting on Mr. Dickey's promotion, Sam R. Honegger said that he and his brother Frank Honegger had requested this action on the part of the board based upon their close personal working relationship with Mr. Dickey over the past 10 years.

Mr. Honegger, commenting on the company's business, noted further that the firm had doubled its profits for the fiscal year ended June 30 and that at the end of the first quarter of this fiscal period, profits were running 47% ahead of last year's results. For the last five months, he said, feed tonnage is up 25%, farm buildings up 138% and equipment sales up 153%.

Navajo Indians To Take Feed Grains

WASHINGTON — A big donation program for corn and oats has been approved for the Navajo Indian tribe reservation by the U.S. Department of Agriculture. The supplies will cover the feeding of lamb flocks for a period of three months.

It is an outright donation program from Commodity Credit Corp. stocks, but the grain will have to be ground or processed before delivery to the reservation. The areas involved are in New Mexico, Colorado and Utah.

USDA officials say that both from the financial and practical viewpoints, the government would have preferred to give grain sorghums, but the Navajo Indians are insisting on a mixture of corn and oats.

It is understood that processing contracts for the CCC-donated feed grains will be made by the Navajo Indian tribe leader, Paul McCabe. He is located at Window Rock, New Mexico. Trade observers believe that Kansas City processors will have the inside track because Kansas City has some freight advantage over other points.

Hatchery Output Of Chicks Up From Year Ago

WASHINGTON — Production of chicks by commercial hatcheries in November showed a 15% increase over a year earlier, according to the U.S. Department of Agriculture.

While the chick hatch is at a seasonally low point, it may be noted that production of egg-type chicks as well as broiler chicks is currently showing increases over a year earlier.

Broiler chicks produced in November—which accounted for 89% of the total chick hatch—totaled 131,889,000. This represents a 13% increase over a year earlier as broiler production continues to increase despite low prices.

Egg-type chicks produced in November totaled 15,887,000, compared with 12,156,000 for the same month in 1957. This represented a 31% increase.

It has been predicted that flock replacement chickens raised in 1959 will be down from a year earlier as producers react to lower egg prices brought on by a larger laying flock and bigger production this season. However, the hatch is up in late 1958.

Larger December hatches than a year ago of both broiler-type and egg-type chicks are in prospect. The number of egg-type chicken eggs in incubators on Dec. 1 was up 16% from a year earlier. The number of broiler-type eggs also was up 16%.

For egg-type chicken eggs in incubators on Dec. 1, New England and the west north central and east south central states show decreases from a year earlier, while all other regions show increases. For broiler type eggs, increases are shown in all regions, although there are variations among areas.

Albers Plans to Install Foragizer in Oregon

REDMOND, ORE.—A "Foragizer" machine for the manufacture of hay wafers will be in operation here sometime after March, according to an announcement by a spokesman for Albers Milling Co.

Earl W. Kelner, Los Angeles, vice president of Albers, met here recently with members of the Redmond industrial committee to describe the process used in manufacturing the 4-in. "Hayfers." The Foragizer is manufactured by Sumner Iron Works, Everett, Wash.

Albers has purchased patent rights to Foragizers manufactured by Sumner and will be sales outlet for the machines. Total cost is reported to be about $42,000 including a 100 h.p. diesel engine or electric motor.

Albers has also been running an experimental unit in Chowchilla, Calif., where there is ample alfalfa production.

Mr. Kelner said Redmond has been selected definitely as a site for a Foragizer installation. It will be located adjacent to the Redmond Packing Co., where a building is available. Other factors influencing the selection, Mr. Kelner said, were the availability of alfalfa in the area and the fact that central Oregon is a cattle feeding area.

The alfalfa wafers can be made of alfalfa alone or can include any quantity of ground grains and molasses for binder.

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Number of Milk Cows on Farms Continues to Drop

WASHINGTON — The number of milk cows in the U.S. continues to decline. In fact, the decrease in 1958 has been enough to drop U.S. milk production below the previous year for the first time in several years.

Meanwhile, production of milk per cow continues to gain.

This situation is noted in a recent report by the U.S. Department of Agriculture on the dairy situation.

In spite of large feed supplies and favorable price relationships, milk production in 1958 will be slightly less than the record high of 126.4 billion pounds produced in 1957. The decrease follows five years of increase.

More Cows Culled

USDA noted that the principal reason production did not increase in 1958 was the rise in prices for meat animals during 1958. For both cattle and hogs, marketings for slaughter were reduced in order to build up herds. The reduction in quantity of meat produced led to substantially higher prices for both beef cattle and hogs. This development encouraged many farmers to cull their dairy herds more closely as the advance in beef prices provided a convenient means to upgrade their herds rapidly. Also, with the higher price for dairy animals and, temporarily at least, improved opportunities in production of beef and hogs, a number of additional farmers shifted from keeping of milk cows to specialization in other livestock.

The drop in number of dairy herds reduced the mid-1958 number of milk cows on farms by 3½% below a year earlier, even though size of herds continued to increase as specialization gained. It appeared that the number of milk cows continued downward during the second half of 1958.

Slower Decline Seen

However, in 1959, the number of milk cows probably will not decline so sharply as in 1958. And, production per cow is almost certain to reach another new high unless pasture and growing conditions drop considerably below average. As a result, some increase in milk output is likely in 1959.

Milk production rose slightly above a year earlier late in 1958, but for the year as a whole, output will fall a little short of the 1957 total.

USDA noted that the feed situation has been exceptionally favorable for milk production during 1958. For one thing, the especially favorable relationship between milk and feed prices and the abundant supply of grains resulted in farmers' feeding a record amount of concentrate feeds per head during 1958. An additional reason for the increase in rate of concentrate feeding is the expanding milk producing capacity of dairy animals, which requires increased concentrates.

New CSS Appointment For Clarence Palmby

WASHINGTON—The appointment of Clarence D. Palmby, former deputy administrator for price support, to the position of associate administrator of the Commodity Stabilization Service has been announced by Ezra Taft Benson, Secretary of Agriculture.

Mr. Palmby will succeed Clarence L. Miller, who was appointed Assistant Secretary of Agriculture.

The appointment of two other men to positions of increased responsibility in CSS was also announced. Forest W. Beall, present southwest area director in the CSS field service, will succeed Mr. Palmby, and J. Taylor Allen, former chairman of the Utah Agricultural Stabilization & Conservation Committee, will succeed Mr. Beall.

In his new position, Mr. Palmby will work with Walter C. Berger, CSS administrator, in the over-all direction of the production adjustment, price support, commodity management and related activities of the agency, including programs and operations authorized by the Commodity Credit Corp.

Mr. Beall is a graduate of Oklahoma State University and is a leading wheat producer. He has also served as editor for the Oklahoma Farmer-Stockman and as associate editor of the Record-Stockman, a Denver publication. Mr. Allen is a general farmer. He served as chairman of the Utah ASC committee from 1953 to 1956.

New Bulk Tanks Built At Grants Pass, Ore.

GRANTS PASS, ORE.—Finishing touches were added recently to eight bulk storage tanks of the new Oregon Egg Producers plant at Grants Pass.

The tanks are each of 21-ton capacity and are capable of holding a total of more than 160 tons of grain and almost that much of ground feed.

Feed will be shipped in from the co-op mill at Eugene, Ore. The installation will eliminate sacking and manual handling of grain, and will permit bulk shipment and bulk handling by machinery. The new facility will serve an area stretching from Roseburg, Ore., to the California line, according to Gene Storz, manager.

"Special Mix" Again Permitted Without Fee, Registration in N.H.

CONCORD, N.H.—Problems arising over New Hampshire's "special feed mixes" will be solved by returning the program to its original status, which permits farmers to ask for "special mix" service and authorizes the mixer to compound it for them without fees or registration.

At a quarterly meeting in Concord, the agricultural advisory board of the New Hampshire Department of Agriculture voted unanimously to instruct Perley I. Fitts, commissioner of agriculture, to retain the "special mix" privilege as it was first set up.

Board members said a mix made up by any other method or compounded in quantity with a view to selling it to others who might want it would be considered a violation of the state law.

They were sympathetic to the mixers' viewpoint that other farmers would be likely to want a similar mixture and that it would be less costly and more convenient to have it on hand. Nevertheless, they maintained that such mixing of an oversupply would be contrary to the letter of the law.

In the future, it was pointed out, the department will call for a letter from the farmer ordering any special mix, stating his name, the formula requested and the amount wanted. Three copies of the original letter will be made, one to be kept on the farm, one for filing at the mixing plant office and the third to be recorded with the agriculture commissioner and his department.

The advisory board explained that this system would make it easier to check up on special mixes, remove all misunderstanding regarding the regulations and eliminate the possibility of questionable practices.

Besides not requiring fees or registration, there will be no sample-taking or analysis of special mixes which comply with the law, and the transaction will be strictly between the farmer and his mixer, with the farmer assuming all responsibility for getting the correct feed.

In their study of surplus mixes, the board reported 25 or more farmers were found to be buying one special mix ration formula, with the result that the mixer kept a general supply on hand in anticipation of these additional sales.

It was emphasized that the special mix law in New Hampshire was never intended to cover wholesale supply needs, as registration and fee payments are required for any general feed mixes.

FEED MILL SOLD

MILTON JUNCTION, WIS.—Ross B. Johnson has hold his elevator and feed mill here to Tom Farley, Janesville, Wis., who will operate it as Farley Milling Co.

Kansas Formula Feed Conference Planned Jan. 4-6

MANHATTAN, KANSAS — Latest information on research in animal nutrition, and interpretations of how this research will affect the formula feed industry will be presented at the 14th Kansas Formula Feed Conference at Kansas State College Jan. 4-6.

The conference annually draws around 400 feed dealers, manufacturers, county agents and agricultural leaders.

Speakers from out of state and their topics include: Robert J. Webb, Dixon Springs Experiment Station, Dobbs, Ill., "Pelleting Roughages for Ruminants"; Dr. Rollin H. Thayer, Oklahoma State University, "Fat in Poultry Rations" and "Turkey Nutrition"; Dr. N. N. Allen, University of Wisconsin, "Minerals for Dairy Cattle" and "Preparation of Roughage for Dairy Cattle"; R. S. Johnson, MFA Milling Co., Springfield, Mo., "Quality Control"; Ray Ammon, Quaker Oats Co., St. Joseph, Mo., president of the Midwest Feed Manufacturers Assn, "The Feed Industry," and James Briggs, Hess & Clark, Inc., Ashland, Ohio, "Nitrofurans in Nutrition."

Kansas State researchers on the program, and their topics include: Dr. Draytford Richardson, "Liquid Feeding"; Dr. Paul E. Sanford, "Feeding of Combinations of Antibiotics to Poultry"; and Dr. George

(Turn to KANSAS, page 86)

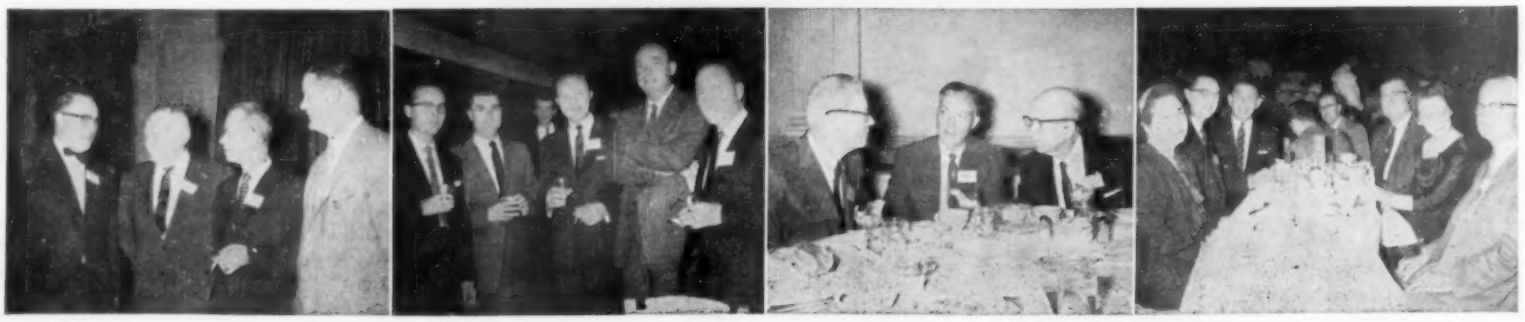
Delmarva Broiler Price Gains Slightly

SALISBURY, MD.—There was only a slight improvement in the price of broilers last week in Delmarva. The average price paid on the farm was 15.1¢ lb., compared to only 15¢ the week before.

Apparently there was less demand last week than the same week a year ago. The same number of birds (3,932,000) were sold. However, a year ago the price was 15.6¢.

In spite of lower prices this year, hatcheries are loading their incubators with more eggs. Last week, for 22 reporting states, the egg set was 43,590,000. This was 11% more than the previous week and 19% more than the corresponding week a year ago. Increases in the number of eggs set from the previous week were reported in 18 of the 22 states.

And broiler growers in the 22 states last week placed 29,427,000 broiler chicks. This was 2% more than the previous week and 16% above the corresponding week a year ago. Increases were reported for 14 states and decreases in eight states.



TENNESSEE FEED CONVENTION—Shown at the recent annual convention of the Tennessee Feed Manufacturers Assn. in Nashville are (first picture, left to right): J. G. Johnston, Security Mills, Inc., Knoxville, Tenn.; Joe Piess, Piess & Sheahan, Memphis; C. Turner Whitworth, Nutrena Mills, Inc., Memphis; Harry Durham, Chas. Pfizer & Co., Inc., Memphis. In the second picture are: E. E. Hurst, Ralston Purina Co., Memphis; Vic Dearen, Dixie Grain Co., Shelbyville, Tenn.; Tom Grill, National Alfalfa Dehydrating & Milling Co., Kansas City; Jack Van Lieshout, Western Condensing Co., Ft. Wayne, Ind., and David Rucker, National Alfalfa, Memphis. In the third picture are: L. H. Simmons, Simmons Supply Co., Lewisburg, Tenn.; Sam Newton, Bemis Bro. Bag Co., Memphis, and H. C. Tillford, Sr., Dixie Grain Co., Shelbyville, Tenn. In the last picture, taken at the convention banquet, are (left to right around the table): Mrs. R. D. Erwin; John Broshard, Alabama Flour Mills, Decatur, Ala.; Howard Werthan, Werthan Bag Co., Nashville; Bill Shearer, Borden Co., Hollins, Va.; Mrs. Brochard, and Bob Erwin, R. D. Erwin Co., Nashville.

EGG GRADING — A group of 11 southern Minnesota feed retailers who joined together for a quality egg program started less than three months ago with automatic equipment for grading, candling and cartoning 350 doz. per hour. Part of the equipment is shown here. The program has expanded so rapidly they have now ordered new equipment which will handle 500 doz. per hour.

Feed Retailers' Egg Program Moves Ahead

By JOHN S. FRANKLIN
Feedstuffs Staff

ROCHESTER, MINN. — A quality egg program launched less than three months ago by a group of local feed dealers and manufacturers in southern Minnesota has already reached its preliminary goal of 100 cases a day.

Eldon Roddis, Roddis Feed Co., Rochester, secretary of the corporation operating the program, said, "We expect to be handling 150 cases a day in another two months."

The corporation, Quality Eggs, Inc., is made up of 11 feed firms who banded together in September "to stay progressive in the feed business" in view of current poultry and feed industry developments in egg production and marketing.

At the time of its formation, Wendell Lenton, manager of the Farmers Elevator Co., Stewartville, Minn., and president of the corporation, said, "It was a choice of either doing this or seeing the egg business slip away. We weren't big enough to do it alone so we're doing it together."

Member firms set up a required uniform ration for uniform yolk color and a breed requirement. Their other requirement is that producers who wish to join be certified under the standards of the Minnesota Department of Agriculture quality egg program, a new program in the state. (See story on this page.)

Of a total number of 50 Minnesota producers now certified under the program, the Quality Eggs, Inc., producers make up more than three fourths. Mr. Roddis said the number of producers in the corporation program "is growing steadily and is now almost 40."

The corporation set a preliminary goal of 100 cases daily as the "break-even point," a goal which is now reached, Mr. Roddis said. The 100 cases are coming from 60,000 hens in the program which range in flock size from 500 to 3,000 birds.

Requirements

No limit is set on the size of the flock, but officers of the corporation indicate that 500 birds are necessary to break even.

Minnesota rules for production of certified eggs cover age of birds, egg gathering, cooling, marketing, cleaning and vaccination. The Minnesota regulation also states that the layers in the program must be fed a "balanced ration which produces a

(Turn to EGG PLAN, page 86)

State Egg Program Growing; Feed Firms Interested

ST. PAUL, MINN.—A new quality egg program for Minnesota egg producers has been getting good acceptance from flock owners in the state, officials of the program have announced.

They said that in the four to five months the program has been in operation it has gained about 50 producers who account for 100,000 birds, and that interest is "mounting day by day."

The program was set up by the 1957 Minnesota legislature to be open to "everyone concerned with egg marketing and an improved poultry industry in the state." It is operated by the division of poultry industries of the Minnesota Department of Agriculture. Lined up with the program so far are flocks ranging in size from 400 to 13,000 birds. Officials said that a little better than 50% of the flocks average less than 1,000 layers.

Feed Firms Interested

More than 75% of the flocks and about the same percentage of hens are under programs sponsored by feed firms and groups of feed firms. The large majority of flocks are in one program operated by a group of southern Minnesota feed manufacturers and dealers. (See story on this page.)

"We have had a great deal of interest also from large feed firms," a state official said. "Those with egg programs have about the same requirements for quality that we do, and those that do not have egg programs but may be considering them are very interested."

One advantage gained for feed firms which plan such a program, he said, is that egg producers are hearing about the program and are learning quality requirements from the state. This, he said, will make it easier for feed firms or any other organizations planning a program to get the support of egg producers.

Required for certification by the state is a 14-point program. This includes confinement housing, frequent gatherings (minimum of three daily for floor layers and two for caged hens), twice-a-week marketing or more, farm cooling (60° and controlled humidity), age limited to 18 months from date of hatch, clean

(Turn to MINNESOTA, page 86)

Oilseed Meal Futures Show Irregular Trend

MEMPHIS—Oilseed meal futures were irregular at the close on the Memphis Board of Trade Dec. 17, compared with Dec. 10.

There was a continuation of the irregular advance in soybean oil meal. New season highs were posted in nearby months during the week. Cash oil meal was in a tight position for spot shipment, still commanding a premium over the futures market for prompt delivery.

Severe cold weather over large sections of the country necessitated heavier feeding of consuming units. And, despite increasing comment regarding the relatively unfavorable feeding ratios, feed business continued generally excellent.

Cottonseed oil meal suffered some losses on a market correction after moving up rapidly.

Unrestricted soybean oil meal closed Dec. 17 $3.50 ton higher to 10¢ lower than on Dec. 10, Eastern Trunk Line soybean oil meal 50¢ to $2.50 higher, bulk cottonseed oil meal $2.50 higher to $1.75 lower, and sacked cottonseed oil meal unchanged to $3 higher.

Trading for the period amounted to 11,400 tons of unrestricted soybean oil meal and 1,700 tons of bulk cottonseed oil meal.

Trustees to Meet on Oscar Straube Fund

KANSAS CITY—Trustees of the Oscar Straube Memorial Fund will meet soon to determine the most effective use of the fund to promote feed education at Kansas State College.

It is planned to make the formal presentation of the fund to the college on Jan. 5.

Trustees are Maurice Johnson, Staley Milling Co., Kansas City; W. E. Glennon, American Feed Manufacturers Assn., Chicago, and Ray Ammon, Quaker Oats Co., St. Joseph, Mo.

Contributions to the fund are being sent to Kansas State College, Manhattan, or to Feedstuffs, 612 Board of Trade Building, Kansas City, Mo.

Mr. Straube, whose death occurred Nov. 12, was president of Pay Way Feed Mills, Inc., Kansas City, and immediate past chairman of the AFMA. Prominent in industry affairs for many years, Mr. Straube had a deep interest in youth and education, which prompted friends to establish the memorial fund at Kansas State.

Plans Outlined for S.C. Poultry Federation

COLUMBIA, S.C.—A South Carolina Poultry Federation came a step further toward reality when some 80 persons approved tentative plans outlined at a meeting in Columbia.

A report of a 15-man committee of poultrymen, headed by Don Huntington, Spartanburg, S.C., milling official, was approved by the group with the recommendation that details be worked out, including a proposed constitution and by-laws.

It was suggested the final report and organizational draft be presented during the South Carolina Poultry Festival scheduled for the first week in June.

Those attending the meeting included members of the South Carolina Poultry Improvement Assn., the South Carolina Turkey Federation and the South Carolina Poultry & Egg Board.

The Poultry Festival will be held in Batesburg-Leesville, and will be sponsored by the three associations of the community's Chamber of Commerce.

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Minnesota Egg Producers May Form Cooperative

By JOHN S. FRANKLIN
Feedstuffs Staff

MINNEAPOLIS — Minnesota egg producers, whose production is 75% surplus, took steps at a recent meeting here to retain their old markets and to develop new ones.

Meeting at the Radisson Hotel as guests of the Minnesota Poultry Hatchery Federation convention, members of the Minnesota Egg Producers Assn., a new group formed a year ago, voted to look into the possibility of statewide cooperative marketing.

A meeting to discuss the proposal further has already been arranged for Jan. 20 in Minneapolis when the nine directors of the association will be joined by county representatives of the association from over the state in discussing the proposal with state and federal officials.

The plan is still in the talking stage, according to Leo Baumgartner, Litchfield, Minn., an official of the association, but he said Minnesota producers are aware of "the need for quality and for cooperative marketing if they hope to keep their markets and avoid egg 'factories'."

Speaking at the recent meeting, Mr. Baumgartner said: "In marketing, the farmer can't very well sell beef or pork to the consumer. But the egg producer has a complete, manufactured unit ready for the consumer. His product is easy to move, and this gives him more right than

(Turn to PRODUCER, page 81)

Nichols, Inc., to Build Georgia Breeding Farm

EXETER, N.H.—Nichols, Inc., Exeter poultry breeding firm, has announced the acquisition of a 212-acre tract in Greensboro, Ga., on which the company said it plans to build a modern poultry breeding farm.

Construction will begin immediately on 11 buildings to form the nucleus of the advanced facility. According to G. E. Coleman, Jr., president, the $400,000 farm will be in full operation by 1960. In addition, a brick school building nearby has been made available to the company as an adjunct to the farm's facilities.

"This new farm," declared Mr. Coleman, "will expand our investment and facilities in Georgia, already represented by our large hatchery in Dahlonega, some 75 miles away.

"Our experimental and developmental breeding work will continue, as in the past, to be centered in New England," he went on. "We are expanding, and this latest move is part of our plans to keep the broiler industry supplied with breeding stock from nearby sources.

"We wish to emphasize," he said, "for the benefit of our many flockowner associates, that the flockowner farm system as originated by Nichols will continue to be a key factor in our company's method of operation. In fact, we foresee a tremendous growth of the Canadian broiler market . . . perhaps larger, percentagewise, than that in any of the other North American regions in which Nichols now operates. We expect to draw heavily upon the services of our New England flockowners to supply that Canadian market, plus that of the growing northeastern, midwestern, and Pacific Coast states."

Meanwhile, Mr. Coleman said, the Greensboro farm will help extend the natural advantages of nearby production to the broiler industry in the southeast. Ground-breaking ceremonies are planned for late January or soon thereafter, depending upon weather. The first stock is scheduled to be installed by early fall.

Soybeans, Sorghums, Wheat Under Supports Hit Record Quantities

WASHINGTON — Record quantities of soybeans and grain sorghums are going under support in 1958, according to a recent report by the U.S. Department of Agriculture of its November summary of 1958-crop grain price-support activities.

Through Nov. 30, farmers had put 67,031,581 bu. of soybeans and 67,336,170 cwt. of grain sorghums under support. On Dec. 15 a year earlier, soybeans under support had totaled a little more than 41 million bushels and grain sorghums a little less than 50 million cwt.

Corn and oats totals under support were also above last year's totals at this time, but barley, despite a record crop, has less under support than a year ago. Barley, however, is second only to wheat in total number of bushels under support. The barley total Nov. 30 was 70,511,921 bu., compared with 94,960,978 bu. on Dec. 15, 1957.

The wheat total Nov. 30 was 472,136,784 bu., more than all other grains combined. This compares with 176,180,777 bu. of 1957-crop wheat put under support through Nov. 15, 1957, and 184,986,845 bu. put under support through Dec. 15, 1957.

Totals of 1958 wheat under support at this time compare to 1953-crop support totals of 407,678,813 bu. through Nov. 15, 1953, and 431,029,740 bu. through Dec. 15, 1953. Previous to the 1958 crop, the largest quantities of wheat placed under support in any year were from the 1953 crop.

Total 1958 corn under support through Nov. 30, 1958, was reported at 20,006,464, about 6.2 million bushels more than on Dec. 15, 1957. Oats under support totaled 55,273,714, compared with 38,781,317 bu. on Dec. 15, 1957.

Dealer-Grower Dinner Has Turnout of 800

GAINESVILLE, GA. — More than 800 persons attended the annual dealer-grower dinner of the Gainesville Milling Co. recently, to hear Ralph Cleveland, the company president, speak.

The manufacturer, who is past president of the Georgia Feed Manufacturers Assn. and board member of the National Broiler Council, pointed to the government inspection starting Jan. 1, 1959, as the most significant factor in the poultry industry for the coming year. He said it will be necessary to be even more careful and to carry on better management practices in order to produce grade A birds.

Posters displayed on the walls of the Civic Building, site of the meeting, depicted good and poor management practices.

Modifications of Dairy Feeds Noted

WALTHAM, MASS.—A recent bulletin for dairymen from the dairy service department of Wirthmore Feeds, Inc., outlines modifications of Wirthmore dairy feeds and concentrates which are said to improve appearance, texture and performance.

The modifications, said the bulletin, "apply new research findings that prove digestibility of grain rations can be improved by a new balance of mineral ingredients. Wirthmore dairy feeds are now higher in energy content.

"Use of coarse grades of soybean and linseed oil meal gives the feeds a coarser texture and cleaner appearance. Elimination of extremely fine materials results in greater palatability . . . The new grades of soy and linseed provide greater bulk uniformity, allowing more accurate feeding when daily allowances are fed by volume."

Sam Kelly

Soft Phosphate Group Elects New President

DAYTONA BEACH, FLA. — Sam Kelly, Loncala Phosphate Co., High Springs, Fla., was elected president of the Soft Phosphate Research Institute at a stockholders and directors meeting held here recently.

R. D. Roof, Superior Phosphate Co., Dunnellon, Fla., was named vice president; W. C. Fitch, Camp Phosphate Co., Ocala, was elected secretary-treasurer, and E. H. Kellogg, The Kellogg Co., Ocala, was reappointed director of research.

The current status of research grants at several universities was discussed, and recommendations were received for establishment of additional grants for continued study of phosphorus nutrition.

Named to the board of directors were D. E. Thompson, Jr., Sun Phosphate Co., Dunnellon, Fla.; C. D. Bevis, Sea Board Supply Co., Philadelphia; Maxie B. Lowe, Acton, Inc., Dunnellon, Fla.; L. B. Lovett, Manko Co., Ocala, Fla.; R. M. Howard, Howard Phosphate Co., Orlando, Fla.; J. S. Bevis, Soft Phosphate, Inc., Media, Pa.; Mr. Kelly, Mr. Kellogg and Mr. Roof.

Neppco Board Backs 4-Point Promotion Coordination Plan

TRENTON, N. J.—The board of directors of the Northeastern Poultry Producers Council has endorsed a four-point program for the coordination of industry promotion and policy-making activities, it was reported in a recent issue of the Poultryman, national publication of the poultry industry. The program had been recommended by a special Neppco study committee on the National Egg Council.

The study committee said that the single commodity approach, as embodied in the National Egg Council, is not to the advantage of the poultry industry.

(The directors of the Southeastern Poultry & Egg Assn. have urged upon the southeastern egg industry the support of a single national egg organization for promotional purposes only. Feedstuffs Dec. 13, page 1.)

The committee advanced the following four points, which were subsequently endorsed by the Neppco board, as reported by the Poultryman:

"1. That the Neppco board of directors or executive committee invite a like group from the Southeastern Poultry & Egg Assn. to meet and discuss the problem.

"2. That, if this group can come to agreement along the lines of a coordinated industry program, it can lay plans for reactivating on a per-

(Turn to NEPPCO, page 81)

Economist Outlines Effects of End of Corn Allotments

URBANA, ILL. — Predictions on just what effects the end of corn acreage allotments will have on corn and livestock prices were made recently by L. H. Simerl, agricultural economist at the University of Illinois. Prof. Simerl said he looks for the following:

- Market prices of corn and the other feeds will hold in the range of the past two years—$1 to $1.20 bu.
- Prices of meat animals, which have been high in relation to prices of feed and most other farm products, will swing down to more normal ranges compared with feed prices. Livestock will not make profits every year, but producers will have more good years than bad ones.
- Prices of milk, butterfat, poultry and eggs won't change much, and profit margins won't be much affected by the new program for corn.

Corn and other Feeds. There is no good reason to expect any exceptional increase in feed production. No big increase in the acreage of feeds is in sight. Most of our good land has always been planted to feed crops, soybeans, wheat or cotton. The relatively small acreage coming out of the Soil Bank in 1959 may be offset by less favorable growing conditions in 1959 than in 1958.

Price incentives to boost per acre yields will be less than previously. New price support rate for corn will be 20 to 25¢ lower than the high support rate of the past two crops. It will be about the same as average market prices in the past two years.

Elimination of the high support level for corn will have the effect of reducing the government demand for corn. It will also encourage increased feeding of corn to hogs, beef cattle and poultry.

Meat Animals. In recent years prices of hogs and cattle have been unusually high in relation to market prices of corn and other feeds. For example, during the 10 years 1949-1958, the hog-corn price ratio averaged 14.3 compared with the earlier long-time average of about 11.6. Prices of beef cattle were equally favorable in relation to feed costs.

While prices of meat animals were far out of line with prices of corn, they were not so far out of balance with the high price support level. As price supports for corn move close to market value, production of livestock will increase and prices will swing downward. However, the prospective price support level for corn will provide considerable support for livestock prices. Many farmers will take a "sure-thing" loan at around $1.10 or $1.15 rather than put out extra effort and take the risk of feeding hogs or cattle. This will tend to keep livestock prices high in relation to feed prices. Livestock will not make profits every year, but producers will have more good years than bad ones.

Dairy. The new price support level for corn does not seem likely to have much effect upon prices of milk or butterfat. Price supports for manufacturing milk, and price-fixing market orders for fluid milk, remain unchanged.

Poultry and Eggs. Poultrymen now buy most of their feed. Their industry has been very competitive, and the new program for corn makes no important change in the prospects for profit margins.

Southern Farm Forum

NEW ORLEANS, LA.—The 12th annual Southern Farm Forum will be held in New Orleans Jan. 22-23 with leading southern farm and business spokesmen participating in the program.

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Animal Production Society—Part 2

Animal Scientists Report on Feeding Studies with Beef Cattle and Lambs

By Special Writer

CHICAGO—Attention was focused on recent developments in ruminant nutrition as college, industry and other scientists gathered in Chicago recently for the annual meeting of the American Society of Animal Production.

Researchers presented a large number of reports on studies with beef cattle and lambs.

Some of the reports considered to be of most interest to feed men are summarized below. (Reviews of swine nutrition research reports at the meeting appeared in the Dec. 13 issue of feedstuffs.)

Among the general subjects covered at the meeting were:

- Hormones, antibiotics, tranquilizers, gibberellin and other feed additives.
- Artificial rumen studies and rumen function.
- Protein and energy.
- Minerals and vitamins.

Following are reviews of some of the research papers:

Hormones, Antibiotics, Tranquilizers and Other Feed Additives

Ruminant researchers are continuing their investigation of hormone-active substances and a number of other feed additives, including antibiotics, tranquilizers, a plant growth regulator, thyroid-active materials and others in rations for fattening cattle and sheep. The experiment stations reporting on research of this nature included Iowa State, Florida, Nebraska, Ohio, Cornell, Montana, North Carolina, Washington State and the U.S. Department of Agriculture. Reports also were made by researchers from Chas. Pfizer & Co., American Cyanamid Co. and Swift & Co.

In general, the research with diethylstilbestrol (DES) confirms present knowledge that the compound stimulates rate of gain and improves feed efficiency in fattening steers and heifers and also in fattening lambs. Either oral administration (10 milligrams daily) or implantation of DES (24-36 mg.) appears to give comparable results. A combination of estrogens, estradiol and progesterone (trade name Synovex) gives the same response as DES, according to the results reported by researchers, while a DES derivative 3, 3′ allyl DES, failed to equal DES in promoting increased rate and efficiency of gain. A sex difference in response to DES was reported from the Ohio Experiment Station where DES implants (36-72 mg.) gave greater and more consistent improvement in rate of gain in steers than in heifers. However, a combination of DES and testosterone (a male sex hormone) increased gains of heifers over either one alone and was comparable to the DES treatment in steers. Best results in heifers were obtained with the implants of 24-36 mg. DES and 200 mg. testosterone in combination.

The effects of time and number of estradiol-progesterone (Synovex) implants during an extensive period covering wintering, summer, pasture feeding and final finishing, were investigated by Illinois researchers. They found that in feeding periods longer than 224 days, a second implant at 140 days increased weight gains over a single implant initially or a late single implantation at 140 days.

Combinations

Results of testing DES in combination with other feed additives were presented by several researchers. In Florida experiments with two-year-old steers, a tranquilizer Atarax (hydroxyzine) gave a statistically significant increase in gains of steers receiving a full feed of grain, but not in steers fed limited grain or no grain or pasture; while either oral or implanted DES gave significant increases in gains in all comparisons. However, in full-fed steers a combination of DES and tranquilizer implants gave significantly faster gains than DES alone. In Nebraska trials with fattening calves there was no additive effect from feeding a different tranquilizer, tri-chlorpromazine (10 mg. daily), in combination with oral DES (10 mg. daily), but it was observed that the animals receiving tranquilizer appeared to go on feed easier than those not receiving the drug. In the Nebraska trials the gain response to DES was smaller than normally would be expected, and this effect was attributed to the fact that the basal ration contained dehydrated alfalfa which has been shown to possess estrogenic activity and in earlier Nebraska experiments has given increases in rate of gain nearly equal to DES.

Dairy Cows Get Tranquilizer

In Michigan State experiments the feeding of a tranquilizer (hydroxyzine) to lactating dairy cows at levels of 2.5 to 50 mg. per day failed to exert any significant effects on milk production in any of the trials or at any of the levels fed. A tranquilizer also had no significant effect on butterfat tests, body weight change or feed consumption.

Montana researchers reported that in one fattening trial combinations of Dynafac (trimethyl alkyl ammonium stearate) with either implanted DES or Synovex (estradiol - progesterone combination) gave greater increases in gains than any of the treatments alone, but in a second trial with pelleted feed, a gain response from Dynafac alone (200 gm. per ton of feed) was as great as with a combination of Dynafac and 36 mg. DES implant. In contrast in Washington State, results with steers implanted with DES, the addition to a pelleted ration of either Dynafac, diallyl hexestrol, oxytetracycline, choline, lecithin or tallow failed to significantly influence gains. In another series of experiments at Washington State with steers fed alfalfa soilage, a combination of oral DES (10 mg. daily) and chlortetracycline (75 mg. daily) gave significantly better gains than DES, chlortetracycline, or penicillin (32 mg. daily) alone or a combination of penicillin and DES. However, all the additives improved feed efficiency and penicillin provided protection against bloat, which was a problem in the experiments. DES lots fed have the highest number of steers grading choice.

At North Carolina DES increased the gains of steers fed limited grain on pasture; and Aureomycin reduced grain consumption but did not decrease rate of gain in rations containing 10% added yellow grease to restrict consumption of self-fed grain.

The results of lamb feeding experiments at Georgia and Cornell and reports from Swift & Co. and American Cyanamid Co. show that either oral or implanted DES significantly increases rate of gain in fattening lambs. The Cornell and Georgia research indicates some lowering of carcass finish and grade in lambs receiving DES, and Swift & Co. reported DES feeding increased the number of lambs having yearling joints although DES did not affect carcass grade and quality. American Cyanamid Co. researchers reported that weekly injections of one mg. of testosterone propionate gave the same stimulation in rate of gain as DES feeding (2 mg. per pound of feed) but that a combination of two treatments was superior to either alone. Further trials show that a combination of 0.8 mg. of DES and 20 mg. of methyl testosterone was superior to DES, testosterone propionate injections, alone or in combination or to methyl testosterone alone.

Tapazole Tests

The newest hormone-active substance being tested in cattle fattening ration is methimazole Tapazole, a goitrogen. Experiments at Iowa State with 30 lots of cattle, showed that methimazole at levels of 300 to 600 mg. per animal daily consistently increased rate and efficiency of gain with the greatest stimulation of gain occurring during the first month of feeding in each trial. On longer feeding periods and with the higher levels of methimazole feeding there was a slight decrease in feed consumption. Carcass grade tended to be improved by methimazole feeding in trials lasting longer than three months, and separable fat over the loin and percentage of fat in the logissimus dorsi muscle also were increased. (At the present time FDA regulations do not permit the use of this drug in feeds.)

The growing recognition by animal nutritionists of the importance of naturally occurring hormones in farm crops and forages is indicated by the inclusion on the program of a paper by Frantes of the USDA's Western Utilization Research and Development Division dealing with methods of isolation and assay of the estrogens found in leguminous farm plants.

Promising results with the new antibiotic oleandomycin in rations for lambs and steers were reported by Chas. Pfizer & Co. researchers. In three trials with lambs fed pelleted feeds, oleandomycin consistently increased average daily gains from 3.4 to 15.9%, improved feed efficiency in two of the three trials, and tended to improve carcass grades and dressing percentage. Higher levels of the antibiotic gave variable results. When fed to steers during the last 29 days of a 169-day fattening trial, 20 mg. daily of oleandomycin markedly increased average daily gains in feed efficiency as compared with non-supplemented controlled steers or those fed 80 mg. daily of oxytetracycline (Terramycin).

Gibberellin for Lambs

Gibberellin, another substance which is new in the field of animal feeding, was tested by Chas. Pfizer & Co. researchers for its effects on fattening lamb performance. In three trials with 0.1 and 1.0 gm. levels of crystalline gibberellin per ton of feed, the 1 gm. level in the first two trials gave a statistically significant gain response whereas in the second and third trials the 0.1 gm. level gave a response during the first 42 days of the trials, but the effect disappeared by the end of 53 or 71 days on trial. The results were reported to suggest that the loss of gain stimulation may

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Lynn F. McClintock

JOINS SCHROEDER—Lynn F. McClintock has joined the sales staff of the Schroeder Sales Co., Long Beach, Cal., manufacturers' agent for specialty ingredients to the feed trade. Mr. McClintock attended California Polytechnic Institute, majoring in animal husbandry, and had been engaged in cattle raising and specialty feed supplement sales work for Chas. Pfizer & Co., Inc., before joining Schroeder Sales. He will work out of the company's home office in Long Beach, Cal.

have been due to the instability of gibberellin in pelleted feeds.

Artificial Rumen Studies and Rumen Function

A number of ruminant nutritionists are investigating the complex digestive processes which take place in the rumen. This type of research, involving the use of artificial rumen techniques, alone or in conjunction with animal experiments, is tedious and time consuming. However, it is the kind of research which will provide the answers to many questions regarding ruminant nutrition and which will provide the basis for substantial improvements in ruminant animal performance through nutrition. The experiment stations whose researchers presented results of their numinant studies included Pennsylvania, Missouri, Michigan State, South Dakota, Iowa, West Virginia, Maryland and Ohio, and also USDA.

It was shown by Pennsylvania and South Dakota researchers that artificial rumen studies give results which are comparable to digestion studies with animals and that when fed similar rations there apparently are no significant differences in cellulose digestion by rumen fluid from steers or from sheep. Iowa experiments indicate that in the rumen an intricate balance of trace minerals is required for cellulose digestion by rumen microorganisms. In another Iowa study with sulfur sources for ruminant microorganisms, it was found that sulphate sulfur is a more readily available source of the element than is organic sulfur from cystine or glutathione and is tolerated at higher levels. However, methionine gave higher cellulose digestion than the other forms of sulfur tested, indicating that methionine apparently supplies something of benefit in addition to sulfur.

The source of energy for rumen microorganisms was found to be an important factor affecting the utilization of urea in Missouri experiments. Of several acids, only lactic acid, pyruvic acid and alanine increased cellulose digestion in vitro. Starch was more active than simple sugars; lactose was inferior. A comparison of different starches shows that corn starch promoted the highest activity, followed in order by wheat starch, potato starch and soluble starch. It appears that the composition of starch, perhaps the amylose to amylopectin ratio, affects urea utilization by rumen microorganisms. In other experiments at Missouri it was found that a positive correlation existed between microbio nucleic acid synthesis and microbio protein synthesis and could serve as an index of microbio protein synthesis in rumen studies. Nonprotein nitrogen utilization by rumen microorganisms was determined by using acid production to measure growth of the microorganisms in West Virginia artificial rumen studies. It was reported that creatine was better utilized than urea, and crude biuret was as well utilized as urea. Vitamin B_{12} had a negative effect on the utilization of urea, creatine, and carcosine; diethylstilbestrol had a negative effect on biuret and urea and homo-cystine had a negative effect on sarcosine and urea but a positive effect on creatine.

Protein and Energy Level Effect

Maryland and USDA researchers studied the effects of protein and energy levels on the production of volatile fatty acids in the ruminant and found that the proportion of short chains in fatty acids produced in the ruminant was changed by varying the levels of energy fed, whereas the proportions of higher acids were changed only slightly. Their results indicate that ruminant fluid analysis and short time in vitro studies give a reliable index as to the volatile fatty acid production in the ruminant. In Iowa experiments with sheep fed a corn cob basal ration the addition of corn oil or distilled animal fatty acids decreased nitrogen retention, digestibility of organic matter, cellulose and protein, and increased fat digestibility. Similar effects were observed with either lauric, stearic or oleic acids, whereas in in vitro comparisons oleic acid depressed cellu-

(Turn to page 14)

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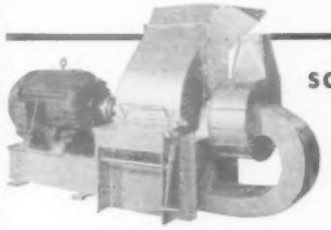

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Thomas T. Quigley

ELECTED VICE PRESIDENT — Thomas T. Quigley was elected vice president, equipment divisions, for Wallace & Tiernan, Inc., Belleville, N.J., at a recent meeting of the board of directors. Mr. Quigley will be responsible for all operations of the company's equipment divisions. He has been associated with the company since 1940. He graduated from the Virginia Military Institute in 1935 with a degree in civil engineering.

lose digestion less than lauric or stearic acids.

The cellulose in soybean hulls was found to be highly digestible in experiments at Ohio State. In vitro tests showed that over 90% of the cellulose and soybean hulls was digested. In sheep digestion trials, soybean hulls and flakes had digestibility coefficients of 50 to 54%, but further studies showed the materials had passed through the rumen too quickly to permit maximum cellulose digestion. When samples of hulls in dacron bags were placed in the rumen of fistulated steer, 96% of the cellulose was digested in 30 hours. Protein digestibility in hulls was 84% and for flakes was 86% in the sheep digestion trials. Both materials contained about 10% protein.

Protein and Energy

Several groups of experiment station an'mal nutritionists have been investigating protein and energy relationships in the feeding of growing-fattening cattle and lambs, and beef breeding cows and heifers.

An'mal fat additions to wintering and fattening rations for beef cattle were tested in experiments at North Carolina, Nevada and Oklahoma. North Carolina results show that feeding of animal fat to steers increased the deposition of saturated fatty acids in rib fat and decreased the amount of linoleic acid and unsaturated fatty acid. DES depressed oleic acid deposition and increased balmitic and balmitoleic acids. The addition of ½ lb. of animal fat daily to a native-grass hay winter ration for steers in a Nevada experiment had no effect on daily gains whereas the addition of 3 or 6 lb. of alfalfa pellets markedly increased gains and feed consumption. Plasma levels of fat cholesterol, carotene and vitamin A were increased by fat feeding; however, added protein in the form of alfalfa pellets largely prevented the rise in blood cholesterol level induced by feeding animal fat. In Oklahoma experiments the addition of corn oil to a wintering ration for steers depressed dry matter and crude fiber digestibility; added corn starch significantly increased nitrogen retention but lowered the apparent digestibility of protein and crude fiber.

Illinois researchers increased the energy of alfalfa, oat and corn silage by adding up to 40% ground shelled corn. When fed to steers, the high energy alfalfa silage ration gave faster and more efficient gains than the oats or corn silage rations. The corn silage ration was benefited by the addition of protein in the form of soybean oil meal, indicating that the corn silage ration was too low in protein to permit optimum gains.

Concentrate-Roughage Ratios

A comparison of widely varying concentrate-roughage ratios in self-fed mixed rations for fattening calves failed to indicate significant differences between different rations according to Oklahoma results which indicate that self-fed mixtures for fattening calves may vary widely in concentrate-roughage ratios with little apparent effect on feedlot performance or carcass merit. When a ration containing 80% concentrate and 20% roughage was fed as pellets or meal, the pelleted ration gave slower but more efficient gains than the non-pelleted ration and pelleted roughage gave slower gains than chopped roughage with either free choice or controlled feeding methods.

Lamb feeding trials at West Virginia with low-quality roughages show that corn cobs gave significantcantly higher digestibility of organic matter, crude fiber, NFE, pentosans, cellulose and energy than rations containing wheat straw, oat millfeed or bagasse pith.

The successful feeding of volatile fatty acids as complete replacement of roughage in a purified-type ration for lambs was reported by Missouri researchers. Average daily gains of 0.31 lb. were obtained on a ration composed of Drackett protein, sucrose, granulated starch, corn oil, minerals and vitamins, with all the roughage replaced with 23% of salts of volatile fatty acids. Liquid volatile fatty acids were not satisfactory. These results and those from additional trials demonstrate that the salts of volatile fatty acids can be used as a roughage substitute and that a specific ratio of volatile fatty acids is not critical for producing satisfactory lamb gains. In Minnesota experiments with lambs the feeding of molasses-urea-alcohol mixture (Morea) as a source of supplemental protein gave significantly slower gains than when soybean oil meal was the protein source but did not affect carcass quality and yield.

USDA, Oklahoma and Florida research with breeding beef cows and heifers shows that severe restriction of protein and energy intake of breeding animals can cause complete reproductive failure (USDA experiments). Digestibility of ration components by heifers fed ⅔ of full feed was higher than for heifers on full feed or on a maintenance level of feeding. In Oklahoma wintering experiments with pregnant beef heifers, the level of feeding affected date of calving, birth weights and weaning weights of calves and growth of the heifers. Similar results were reported from Florida experiments in which low protein intake (50% of NRC requirements) had a detrimental effect on body weight maintenance, delayed rebreeding after calving, and interfered with normal lactation. The detrimental effects were most severe in younger animals (3-year-old versus 8-year-old cows). The feeding of 3 lb. of alfalfa meal to supply a part of a protein markedly benefited reproductive performance in the younger cows.

James A. Stewart

BUTLER PROMOTION — James A. Stewart has been named eastern division bulk storage and handling equipment specialist for the Butler Manufacturing Co., Kansas City, according to E. D. Williams, sales manager for the bulk storage division. Mr. Stewart's job will concern assisting customers with their bulk storage plans and the sale of galvanized and coated steel tanks for all dry granular materials, dealing with firms east of the Mississippi only. He has been with Butler five years.

Minerals and Vitamins

The problem of urinary calculi in steers and lambs was studied in Texas, USDA and South Dakota research. According to results reported by Texas researchers, the antibiotics Terramycin and Aureomycin failed to reduce the incidence of urinary calculi in lambs as had been reported previously. A significant increase in the incidence and development of urolithiasis resulted from pelleting a

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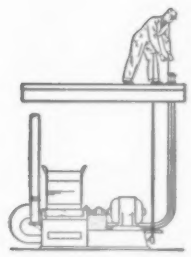

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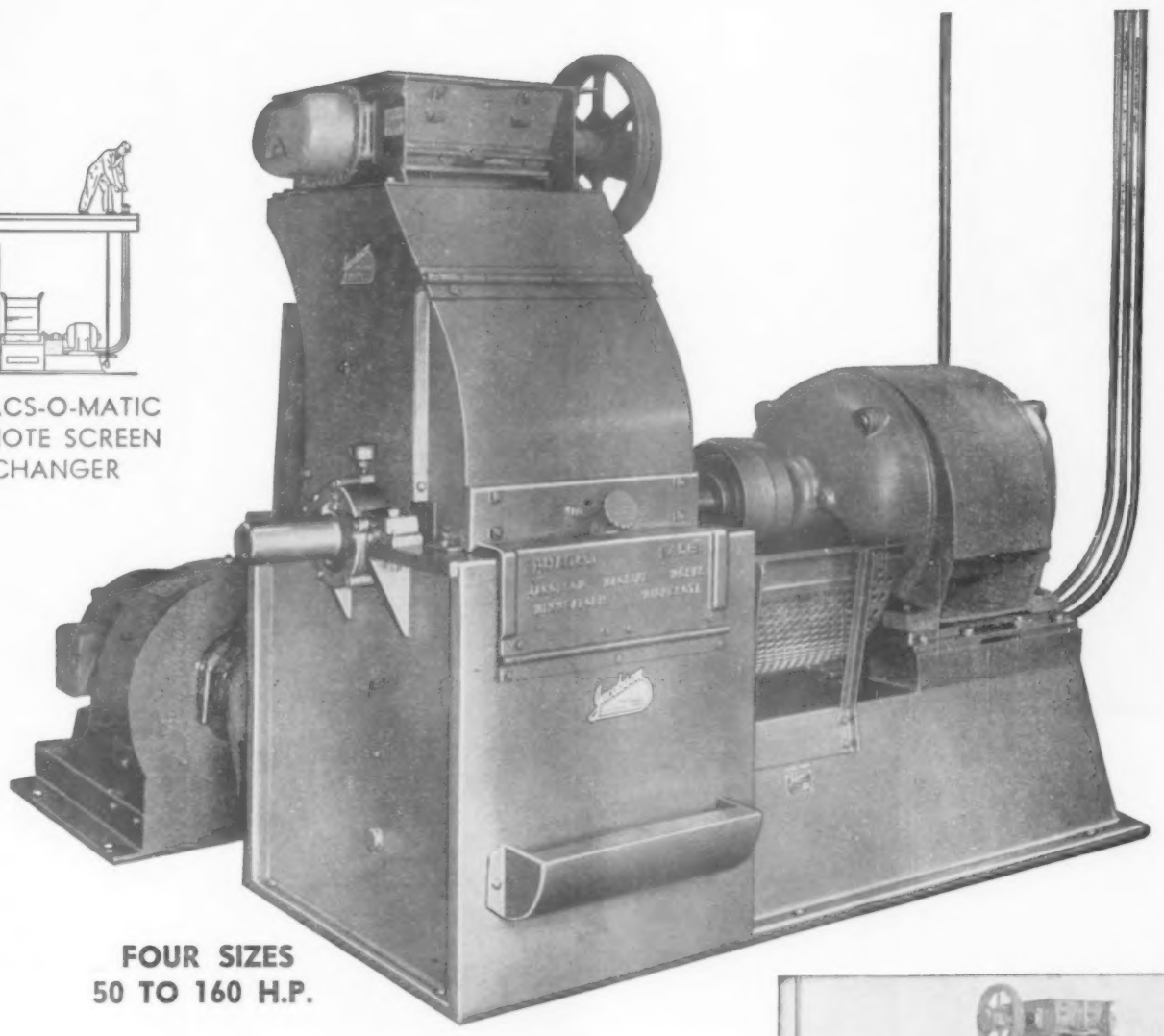

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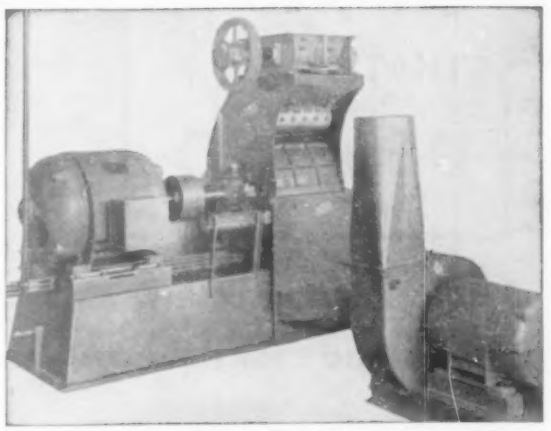

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milo-containing ration. Further research at Texas in cooperation with USDA researchers showed that feeding either ammonium chloride or phosphoric acid reduced the formation of urinary calculi in fattening steers. Ammonium chloride was somewhat more effective than phosphoric acid. Injection of hyaluronidase failed to affect stone formation nor did the substitution of cottonseed hulls for a part of the silage in an experimental ration. South Dakota results indicate that sodium silicate feeding does not appear to be a disposing factor in urinary calculi formation. High phosphorus excretion by lambs was found to be positively correlated with stone formation, and the incidence of calculi was greater in lambs fed prairie hay than in lambs fed alfalfa hay in fattening rations.

Fluorine toxicity in cattle was characterized in a 10-year study at Tennessee. The occurrence and degree of fluorosis in cattle was reported to be dependent upon several factors: (1) the level of fluorine intake, (2) the age of the animal and the stage of tooth development, (3) the length of time that an elevated level of fluorine is ingested, (4) the initial fluorine stored in the animal's body, and (5) the solubility and availability of the fluorine source consumed. The lowest level of fluorine as sodium fluoride which caused a decrease in feed consumption (after 2½ years of feeding) was 48 parts per million in the total dry ration of barn-fed cattle or 1.027 mg. daily per kilogram of body weight. On pasture levels up to 45 parts per million of fluorine did not cause significant decreases in feed consumption.

The results of research on white muscle disease or muscular dystrophy in lambs were reported by Cornell and Wisconsin researchers. In Cornell experiments the incidence of muscular dystrophy in lambs from ewes fed raw cow kidney beans was reduced but not eliminated by feeding one part per million selenium as sodium selenite or 100 I.U. vitamin E daily or .25 lb. linseed oil meal daily. Wisconsin workers, however, were able to prevent prenatal death, white muscle disease and sudden death in lambs by twice weekly administration of 0.5 gram alpha tocopherol. Selenium at 0.5 part per million in the ration decreased the severity of these disorders. Vitamin E administration raised vitamin E levels in ewe and lamb blood plasma and ewe milk. Fish oil was added to an E-low ewe ration to produce the disorders in lambs.

South Dakota researchers, working on the problem of alleviating selenium toxicity in their area found that the feeding of arsanilic acid (0.01%) in rations for weanling calves which contained added selenium (12 parts per million) partially overcame the depressing effect of selenium on weight gains and caused some remission of visible selenium toxicity symptoms. In calves fed seleniferous hay for 168 days and then kept on seleniferous range for an additional 151 days, the continuous feeding of up to 0.01% arsanilic acid significantly increased the average daily gains during the grazing period, but did not affect visible toxicity symptoms.

In an investigation of the effects of vitamin A deficiency in breeding ewes, Texas workers reported that ewes fed vitamin A deficient rations either failed to lamb or dropped dead lambs showing hydrocephalous and/or absence of eyes. The deficient ewes exhibited blindness, chronic convulsion and retained placentas. A daily level of 1,200-1,800 micrograms of vitamin A was required for normal reproduction, as 600 micrograms per day caused deficiency symptoms in the ewes and weakness and early death of lambs. There was some evidence of wool deterioration in deficient ewes.

Denver Yards Said to Prosper in Spite of Direct Selling Trend

DENVER, COLO.—Two thirds of all western feeder cattle and two thirds of all fat cattle are now sold direct to packers without going through the large city cattle terminals, a spokesman for the U.S. Department of Agriculture livestock division in Denver reported recently.

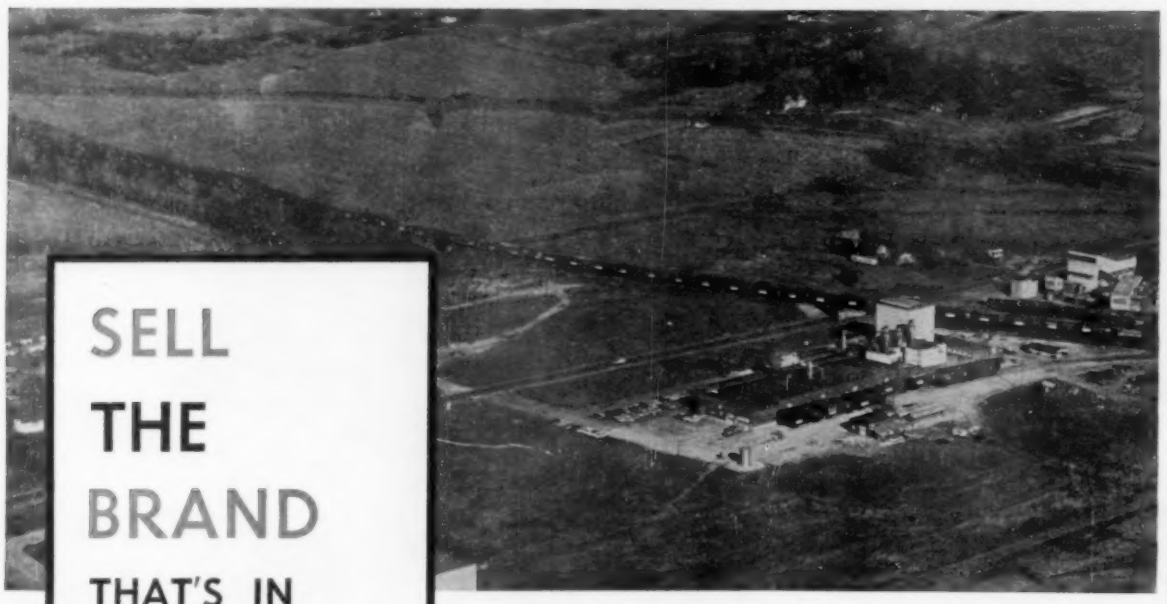
He said another 21% of the feeder cattle are being sold in the small town auction and sales lots, and that only 13% are going through stockyard terminals.

However, an official of the Denver Union Stockyard Co. said that business at the yards "is very good and showing a profit," and that while other big city stockyards appear to be "dying on the vine," important steps to stimulate business have recently been taken by the Denver stockyards.

Latest efforts of the stockyard company to stimulate business was the formation of the Western Sheep Marketers, Inc. The purpose of the move was to provide additional experienced buying and selling services for producers in 13 western states. In another effort to improve its competitive position, the Denver yard now schedules two cattle auctions each fall in addition to the annual Western Stock Show auction. The company is now constructing a bar and modern new restaurant in the Exchange Building, plus a lounge for women, complete with television facilities.

The current average volume passing through the 120-acre Denver yards daily is about $1 million. By making grants to packing firms, the yards are ringed with meat-packing plants which take about 75% of all cattle that pass through the yards.

The Denver spokesman said that the San Francisco stockyards are "doomed," but denied that this trend would have any effect on the Denver yards.



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Fifty Years of Progress in Sheep Nutrition

Many improvements in sheep feeding methods have been put into practice during the past half century. The authors of this article discuss some of the new knowledge gathered and the effect of this knowledge on sheep feeding results

By Dr. W. M. Beeson and Dr. T. W. Perry
Purdue University

EDITOR'S NOTE: The accompanying article is another in a series being published in Feedstuffs as part of the observance of the feed industry's "Golden Year." This article, on sheep nutrition, supplements a previous article on beef cattle feeding by Dr. Beeson (Feedstuffs, Nov. 22). The 12 months following the American Feed Manufacturers Assn.'s 50th convention in May, 1958, were designated as the Golden Year, focusing attention on industry and feeding progress. In this connection, Feedstuffs is publishing a series of articles on nutritional advances and feed industry operations. This article covers developments and advances in sheep feeding. Dr. T. W. Perry, co-author of the article, is associated with Dr. Beeson in livestock nutrition research work at Purdue University, Lafayette, Ind.

The interior of the rumen of the sheep or of the cow is truly one of the "darkest" places in the world. This is especially true from the standpoint of knowledge of what actually takes place in this tremendously capable manufacturing plant. Gradually, new bits of information are being gathered which aid in forming theories as to what goes on inside the rumen, and thus eventually lead to more logical formulation of feeding programs. Therefore, when all of the new knowledge that has been gathered in nutrition, for any one specie, is combined into one ration and this ration is compared with a typical ration used decades ago, we can see a marked improvement in performance in most instances. This is especially true in the science of sheep feeding. Many improvements in sheep feeding methods have been put into practice during the past one-half century. It is the purpose of this article to discuss some of the new knowledge gathered and the effect of this new knowledge on sheep feeding during the past 50 years.

A Golden Year Feature

1. Protein: Years of research have shown that plant proteins such as cottonseed meal, linseed meal and soybean meal are equal in feeding value on a protein equivalent basis. Urea can be used to replace ¼ to ⅓ the protein requirement, but usually the results are inferior to using the oil meals. Urea has not been widely used or recommended for lamb fattening rations. Nitrogen from true protein (plant source) seems to be superior to non-protein nitrogen (Urea-N) for sheep.

Suffice it to say that for best results use either cottonseed meal, linseed meal or soybean meal in sheep supplements. Leave out the urea.

2. Rumen Synthesis: As far as is known, sheep can synthesize all of the B-complex vitamins, vitamin C, vitamin K and possibly other factors essential for life. Prior to rumen development, sheep are essentially mono-gastric animals; but the ewe's milk supplies the daily needs of the lamb until the rumen develops. If lambs are early weaned (2 to 3 weeks), then B-vitamin supplementation is required.

Basic research has also revealed that sheep can synthesize the essential amino acids from non-protein nitrogen but not rapidly enough for maximum growth.

3. Minerals: When sheep existed primarily under a natural environment, only salt was fed. Research in Africa and the states soon showed that phosphorus, and sometimes calcium, was a limiting factor in sheep nutrition. Numerous experiments have established that the most limiting mineral elements in sheep rations are calcium, phosphorus, salt (sodium and chlorine), cobalt, iodine and sometimes sulfur.

Trace mineralized salt, iodized salt and special mineral mixtures have been developed to protect sheep against mineral deficiencies. Sheep are mineral wise and can be fed on a free-choice basis.

Copper has been shown to be lacking in certain parts of Australia; but no critical areas, with the possible exception of Florida, have been designated in this country.

4. Vitamins: Vitamins A, D and E are required by sheep. California studies have shown that sheep have an unusual capacity to store in the body adequate amounts of vitamin A to carry them over the winter or dry season. Special vitamin A supplements are not needed for sheep unless they are being fed for prolonged periods on poor roughages. Vitamin D requirement is met by the ultraviolet rays from the sun and by suncured feeds.

Vitamin E is the most critical vitamin in sheep diets. Research at Cornell has shown that "stiff lamb disease" is caused by a deficiency of vitamin E in the ewe's ration during pregnancy. Stiff lambs have been cured by a dosage of 100 milligrams of alpha tocopherol acetate every other day until cured. Certain disease organisms may also cause stiff lambs which cannot be cured by vitamin E therapy.

5. Hormones: Although gains and feed efficiency are significantly improved by the use of female-like hormones in feeder lambs, the carcass quality is depressed so much that the use of hormones in lamb feeding operations has not been very popular. Implanting 3 mg. of stilbestrol or feeding 2 mg. per head daily will increase daily gain from 10 to 40% and improve feed efficiency 10 to 27%. The bulk of the research data indicates that implants give more favorable response than oral feeding.

In one set of typical experimental trials, untreated lambs (no hormone) had a carcass grade of 95% choice and 5% good while the lambs that were either fed or implanted with stilbestrol graded 45% choice and 55% good. Dressing percentage is lowered by hormone treatments. This significant depression in carcass quality makes the use of female hormones unattractive to the lamb feeder. We need to find some hormone or hormone combination that will give the same type of stimulation in gain and feed efficiency as stilbestrol but will also increase—or at least not depress—fat deposition.

6. Antibiotics: Early studies on lambs demonstrated that the oral administration of high doses (100 mg. Aureomycin daily) caused poor gains, loss of appetite, digestive disturbances and diarrhea. Subsequent research by many workers has indicated that lower supplementary levels of antibiotics (10 mg. per pound of ration) do not cause any ill effects and, in some cases, a slight improvement in daily gain and feed efficiency and also some reduction in enterotoxemia. Aureomycin (chlortetracycline) and Terramycin (oxytetracycline) have similar effects on lambs. A review of the literature has indicated that a more favorable response has been obtained from the use of antibiotics in commercial feedlots than data reported by various experiment stations. This might be explained on the basis of a higher disease level in commercial feedlots than is ordinarily encountered under carefully controlled conditions at research institutions.

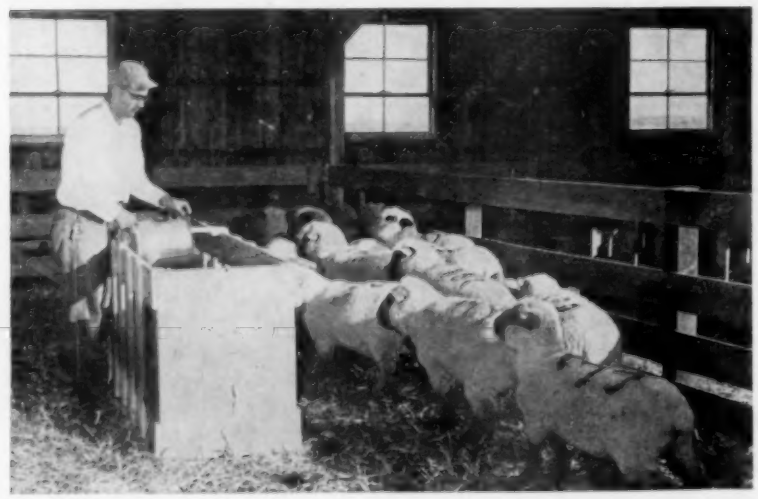
Quantitative studies have shown that where an antibiotic is needed it should be fed at a level of 10 mg. per pound of total ration. When response is obtained, usually daily gain and feed efficiency are improved about 10%. There is no change in the carcass quality.

No doubt there are antibiotics in existence that would consistently improve the gain, feed efficiency and health of lambs; but as yet this antibiotic has not been discovered or tried. In many ways lambs are much more susceptible to diseases and death losses in the feedlot than cattle. Therefore, it is important that we continue to screen a large number of antibiotics so that the health, growth rate and feed efficiency of feedlot lambs can be improved.

7. Tranquilizers: Lamb research with tranquilizers has given varied and inconsistent results. In several trials at Purdue University reserpine and hydroxyzine did not improve daily gain or feed efficiency in lambs fed a complete pelleted ration. Feeding 5 to 10 micrograms of reserpine per pound of ration or 1 to 2 milligrams of hydroxyzine per pound of diet had no significant effect on daily gain or feed efficiency.

In contrast, Pfizer research workers have indicated some improvement in gain and feed efficiency by the incorporation of either hydroxyzine or Rauwolfia in lamb diets. Iowa researchers reported that lambs fed hydroxyzine (Tran-Q) gained 17% more than the controls on 6.5% less feed per unit of gain.

Lambs vary tremendously in their response to diets due to their origin, breeding and environment. More research needs to be conducted to quantitate tranquilizers and also to



When all the new knowledge that has been gathered in nutrition, for any one specie, is compared with a typical ration used decades ago, we can see a marked improvement in performance in most instances. This is especially true in the science of sheep feeding. Experiment station research, illustrated in this picture taken at Purdue, has brought greatly increased knowledge. (A 1908-vs.-1958 comparison of rations for fattening lambs was made in a Purdue test reported elsewhere on this page.)

• • •

How Far Have We Come?

At the American Feed Manufacturers Assn. convention on May 22, 1958, two groups of lambs were exhibited which had been fed for a period of 42 days on a typical 1908 ration and a complete pelleted 1958 ration. This is a dramatic demonstration of the progress that has been made in lamb feeding in the past 50 years.

Lambs fed on the complete pelleted ration gained 152% faster on 34% less feed per unit of gain than lambs on the 1908 diet of shelled corn, linseed meal, hay and salt. The ration and performance data are given below:

1908 Vs. 1958 Ration for Fattening Lambs
(Average of 8 Lambs Per Lot—Fed 42 Days)

1908 Ration (Daily)	Lb.
Shelled corn	1.2*
Linseed meal	.1
Timothy hay	1.7*
Salt	Free Choice
Total	3.0

*Shelled corn was full-fed and hay fed ad libitum.

1958 Ration (Pelleted)	%
Ground corn cobs	39.5
Alfalfa (dehydrated)	20.0
Ground corn	32.0
Soybean meal	7.0
I. salt + cobalt	0.5
Bone meal	1.0
Vit. A & D concentrate	1700 A, 212 D/lb.

Implanted with 3 mg. stilbestrol.

Performance Data

	1908	1958
Initial weight	70	70
Final weight	86	110
Daily gain	.38	.96
Daily feed	3.0	5.0
Feed/lb. gain	7.9	5.2
Cost/lb. gain	11.7c	10.5c

"Our Company's Feed Division is moving rapidly to help our dealers seize today's big new opportunities,"

says **ISAAC S. RIGGS,** *Vice President, Feed Sales of The Quaker Oats Company,*

in this report to Independent Feed Dealers

ISAAC S. RIGGS joined The Quaker Oats Company in 1923. A graduate of Iowa State College, he first worked with the noted Dr. O. B. Kent, long-time Quaker Feed Research Director. Advancing through the sales department, "Ike" was named a Quaker Vice President in 1953.

"I want to report to you that The Quaker Oats Company is mighty interested in your future and success in the retail feed business.

"As you know, the changing farm feed market is bringing about a new look in the feed business. What does this mean in regard to your future as an independent feed dealer? The successful feed dealer must expect to do a greater share of his business with fewer—but larger—customers. To satisfy those buyers, he must equip himself to give them the service they demand.

"New and improved Quaker services are actively helping many veteran Ful-O-Pep dealers and new dealers who are continually joining our growing family. Engineering, production, credit, sales training, and research departments of Quaker are constantly helping these independent dealers to meet the changing times. We have a fine feed team. These departments know the feed business, and can help you grow in volume and profits. And we are proud of our well-trained Ful-O-Pep District Representatives. They are prepared to help you expand your facilities, offer more customer services and promote new business.

"Part of our growing service is to bring feed manufacturing facilities closer to you and your feeders. During 1958 we will have completed three new Ful-O-Pep feed mills: Shiremanstown, Pa.—Asheville, N.C.—Jasper, Ala. These are new push-button mills. They are three of a series of small efficient plants set up under Quaker's long-range expansion program. They are designed to provide fresher feeds and faster service to you and your customers at lower cost. These new features will draw big customers to Ful-O-Pep Dealers.

"The Quaker Oats Company foresees sales of manufactured feeds expanding 50 to 80% by 1975. We are moving ahead aggressively to help you cash in on this big opportunity. Join up with Quaker at this time of great growth potentials. We're expanding fast. Let's grow together."

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PLAN CONTRACTING PROGRAMS

United Cooperatives of Ontario, Canada, has budgeted $500,000 for a start in financing a new contract sales division, it was announced recently. The new department is now reported working on broiler contracting and expects to enter hog and turkey contracting. Formation of the new division, it was said, results from promotion of contract farming by feed suppliers and processors, together with increased demand from farmers for contract services.

test other types which have not been used in lamb feeding trials.

8. Ewe Pregnancy Factors: Basic research at Purdue has shown that high-quality legumes such as alfalfa hay, dehydrated alfalfa and oat or rye grass contain certain unknown factors which are essential for the embryonic nutrition and normal lactation in ewes. As a result of this research, and many other studies, sheepmen have always recognized that during gestation ewes should have a high-quality roughage such as alfalfa or other legume hays. Subsequent research has shown that normal lambs and lactation can be accomplished by feeding ewes on ground corn cobs as the only roughage provided that it is fortified with essential nutrients such as soybean meal, molasses, dehydrated alfalfa meal, bonemeal, vitamin A and D and iodized salt. Although this is not a practical ration, it illustrates that ewes can reproduce normally on low-quality roughages if their diets are properly balanced. Future research in this field will gradually isolate and identify the specific factors that are most essential for the proper development of the unborn lamb.

9. Creep Rations: In the early stages of growth lambs depend essentially on the ewe's milk for all their nutrients. Early research indicated that the growth rate of a lamb is closely correlated with the milk-producing capacity of the ewe unless a palatable creep ration is provided for additional nutrients. Under favorable conditions a lamb will gain from 0.5 to 0.6 lb. daily from birth until weaning. Research at Purdue has shown that the feeding of a highly fortified creep pellet will increase its daily gain to about 0.75 lb. daily. Also, it has been shown that twin lambs, which usually gain less, will grow as rapidly as single lambs provided that they are given free access to a creep pellet that provides the essential nutrients. Twins on the super creep pellet made a daily gain of 0.75 lb. and the single lambs 0.83 lb. The slight difference in daily gain was not significant. Through research we have shown that twin lambs have the inherited capacity to grow as rapidly as single lambs if they have access to a highly fortified creep ration.

The formula of this diet is given below. This ration has been manufactured commercially and has given very good results under farm conditions. However, it should be emphasized that some of the ingredients incorporated in this diet may not be necessary; but it will require considerable time to test each factor singly.

Purdue "Super" Creep Pellet

	Lb.
Ground corn	37.5
Soybean meal	10.0
Alfalfa meal (dehydrated)	40.0
Cane sugar	10.0
Bone meal	1.0
Iodized salt	0.5
Vitamin-mineral premix*	1.0
	100.0

*Premix mix contributed the following to each ton of feed: Aureomycin 40 gm.; thiamin 2.0 gm.; riboflavin 4.0 gm.; niacin 32 gm.; calcium pantothenate 20 gm.; vitamin B_{12} 40 mg.; ascorbic acid 100 gm.; mixed tocopherols 10 gm.; vitamin A 5 million units; vitamin D 625,000 units; iron sulphate 150 gm.; copper sulphate 12 gm.; and $MnSO_4$ 90 gm.

10. Pelleting a Complete Lamb Fattening Ration: Shortly after the turn of the century it was shown that lambs gain more rapidly and efficiently on whole grain as compared to ground grain. Finely ground feeds are not very palatable to sheep and interfere with the proper rumination and digestibility of nutrients. Therefore, if complete mixed rations are to be formulated for fattening lambs, then it is necessary to condense them to a firm pellet.

Pelleting research at Purdue has shown that lambs will gain consistently about 0.5 lb. per head daily or more if they are full-fed on a complete pelleted diet from the beginning to the end of the fattening period. Lambs on a conventional type hand-fed ration usually gain about 0.33 lb. daily. A comparison of several complete pelleted formulas has led to the development of the Purdue Lamb "58" Pellet which is given below:

Purdue Lamb "58" Pellet*

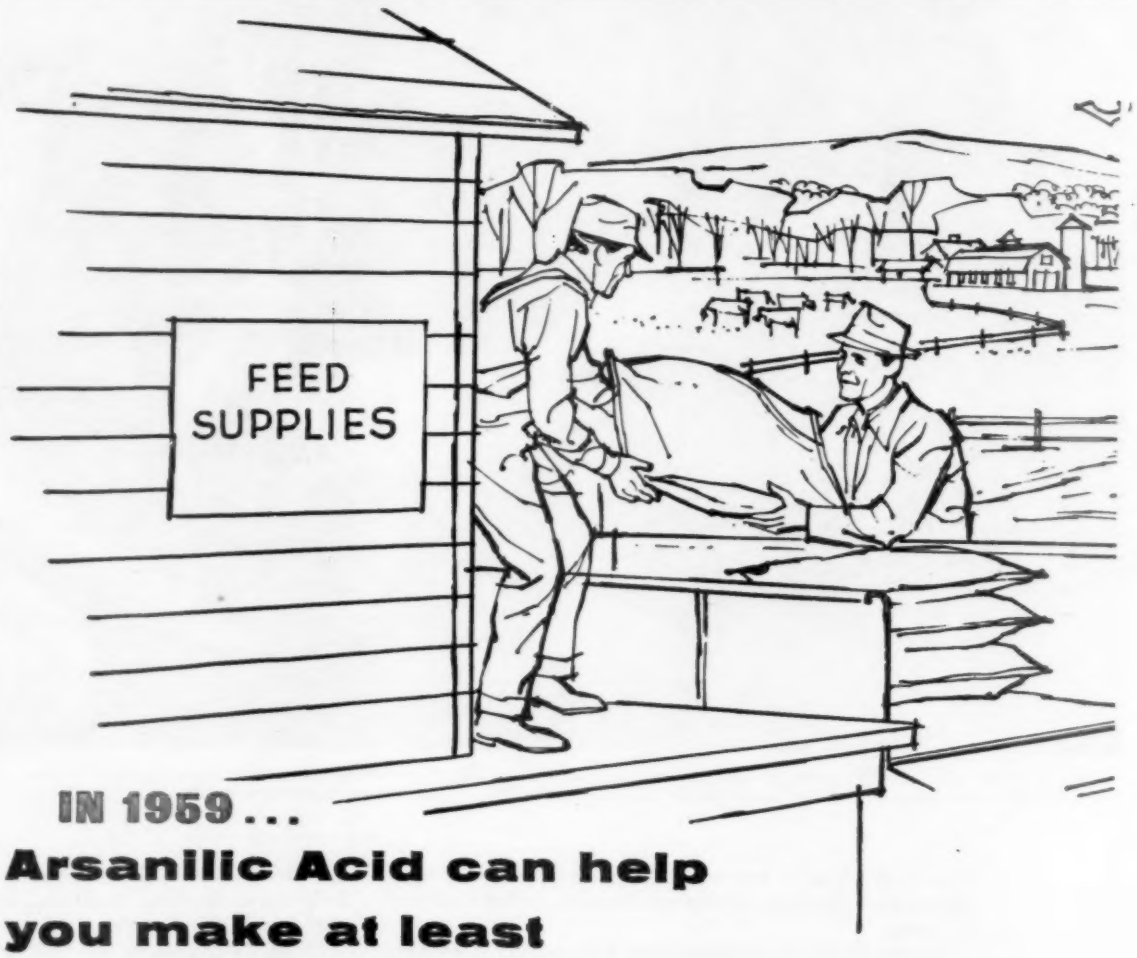
	%
Ground corn cobs	39.5
Dehydrated alfalfa meal (17%)	20.0
Ground yellow corn	32.0
Soybean oil meal	7.0
Iodized salt†	0.5
Steamed bone meal	1.0
Vitamin A & D concentrate‡	.075
	100.075

†One ounce of cobalt carbonate per 100 lb. salt.
‡Gives 1700 units vitamin A and 212 units vitamin D per lb. of ration.
*One-quarter inch pellets.

The results from two trials from feeding the above pelleted ration (1956-1957 and 1957-1958) with western feeder ewe and wether lambs were as follows:

	1956-57 (67 days)	1957-58 (60 days) No DES	1957-58 (60 days) 3 mg. DES Implant
No. lambs	24	20	20
Initial weight, lb.	74	75	74
Final weight, lb.	109	107	116
Total gain, lb.	35	32	42
Av. daily gain, lb.	0.53	0.54	0.70
Pellets daily, lb.	4.1	4.6	4.7
Pellets per 100 lb. gain, lb.	758	845	668

In both trials the lambs were turned into filled feeders the first day and thus were on "full-feed" from the first day of the feedlot period. There was no scouring or going off feed. The lambs appeared to be well filled and content any time of the day or night. This observation is



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For such low cost—less than 40¢ per ton of complete feed—here's what you can offer your customers in feeds containing Arsanilic Acid:

Greater effectiveness: Faster growth and weight gains, higher and more even egg production, healthier animals. Swine and poultry *actually use less feed* to give these better results. Profits look good, even on low-margin operations.

Safety: Wide and unmatched safety enables you to fortify swine and poultry feeds at the same level *with assurance* that livestock will not experience toxicity problems that may affect weight gains, growth, egg production or general health. In addition, Arsanilic Acid offers you . . .

Simple formulation: One set of formulation instructions for all swine and poultry feeds. This minimizes the chance of error in mixing. Enables you to stock and handle just one arsonic compound.

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substantiated by the rapid and efficient gains attained by lambs being fed the pellet. During the first 14 days the lambs gained 1.0 lb. per head daily.

Many lamb feeders feel that feed remaining in the trough from the previous feed should be cleaned out before adding feed. However, no feed was removed from the feeders except for a certain amount of powdered pellets.

Many modifications of the pellet have been tested. In the 1956-1957 feeding trial the following modifications were tested: (1) 7.5% yellow grease, (2) 10% cane sugar, (3) 10% cane sugar plus 7.5% yellow grease, (4) replacing soybean meal with an equivalent amount of dried skimmilk, and (5) replacing soybean meal with an equivalent amount of fish meal (Menhaden, 60%). None of the combinations tested improved the performance of the pellet.

The advantages of a pelleted complete mixed ration for feeder lambs are:

a. Permits self-feeding.

b. Eliminates hazards of bringing lambs up to a "full-feed" since lambs are on full-feed the first day.

c. Results in increased gains.

d. Well adapted to automation.

e. Eliminates sorting of feeds and nutrients.

f. Permits the simultaneous feeding of a balanced ration.

g. Allows the proper content of grain-to-roughage ratio.

h. Cuts down or eliminates digestive disorders and over-eating disease.

POULTRY PROCESSING PLANT

DOUGLAS, GA. — Businessmen here are working to raise funds for construction of a modern processing plant for the Crider Poultry Processing Co. Sponsoring the movement is the industrial division of the Coffee County-Douglas Chamber of Commerce. The proposed plant will cost about $140,000, half of which is to be subscribed by local people, the remainder to be borrowed.

Livestock Production Boom in South Seen As "Important Trend"

URBANA, ILL. — Growth of livestock production in the South, expanded feed grain and grain sorghum output in the Southwest and development of large-scale livestock enterprises were cited recently as "important trends in farming" by L. H. Simerl, agricultural economist at the University of Illinois.

Writing in an outlook letter for Illinois farmers, Mr. Simerl said the trends were brought out in "sideline discussions at the National Agricultural Outlook Conference in Washington," but they had not generally been reported from the conference.

One of these trends, he said, is the belief of producers in other regions that they can make good profits from products now produced mostly in the Corn Belt. As an example, he said many farmers in the South think they took the broiler business away from the Corn Belt, and they believe they can take the hog business, too. Hogs at $18 to $20 would make very attractive profits to southern farmers, he said.

Sorghum grain and feed grain production in the Southwest is being stimulated by price supports, according to Mr. Simerl. Increased production is being achieved principally by the development of new hybrid varieties and by increased irrigation. About 60% of the sorghum grain produced is sold to Uncle Sam, he said, by way of price support loans. After the government takes over the grain, it is sold at cut rates, for export or domestic use, in competition with corn.

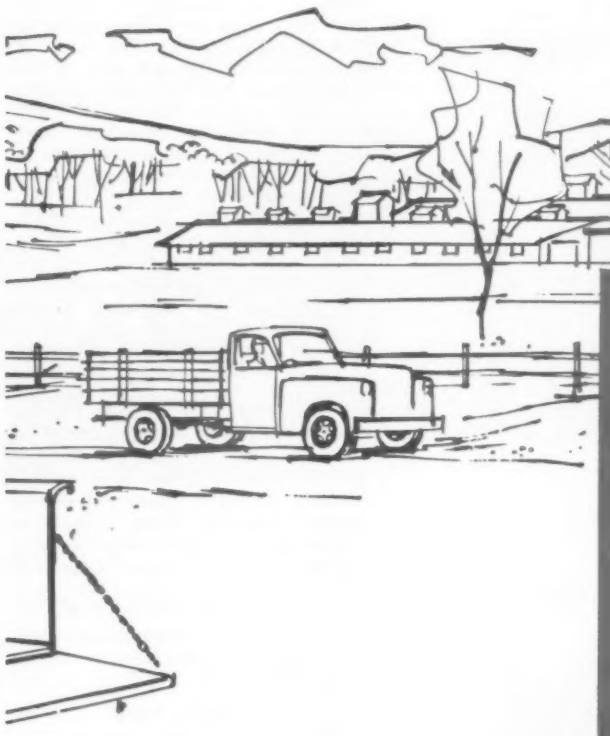
Production of sorghum grain this year is estimated at 639 million bushels. This, he said, will furnish almost as much feed as will be provided by all corn and oats grown in Illinois in 1958.

"In the far Southwest, corn is often the only profitable crop, except for cotton, that can be grown on the newly-irrigated lands," he said. "In Kansas, and probably other dry areas, land can be purchased and wells and irrigation equipment provided for less per acre than the price of corn belt land."

Discussing the development of large-scale farming, Mr. Simerl said one "farm" has 250,000 laying hens. Eight or 10 others have 100,000 hens or more. He also cited a semi-cooperative dairy farm in Iowa with over 800 dairy cows. In Utah, cows belonging to several farmers are handled in one herd, he said, and the profits are divided among the farmers who furnish the cows. There are several such herds.

Tom Marlow Jack Rosenberger

NEW POSITIONS—Tom Marlow has been named senior engineer in the technical department, and Jack Rosenberger has been named manager of the Memphis, Tenn., plant of Central Soya Co., Inc., Ft. Wayne, Ind. An electrical engineering graduate of Purdue University, Mr. Marlow joined Central Soya in 1951 at Gibson City, Ill. In 1954 he was promoted to the position of personnel director at Gibson City and in 1956 to plant manager at Memphis. Mr. Rosenberger is a graduate of Tri-State College in electrical engineering. He joined the company in 1952 as production engineer at the Marion, Ohio, plant. In 1953 he was promoted to the engineering department at the Decatur plant, and in 1956 was promoted to production engineer at Decatur.



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You'll enjoy the easier resale work that results from addition of this low-cost growth stimulant to your feeds.

***Here is a checklist of 23 types of feeds to be fortified with Arsanilic Acid**

Type of Feed	Add Pure Arsanilic Acid per ton of feed†
BROILER FEEDS	
☐ Chick Starting Feeds	90 grams
☐ Growing Feeds	90 grams
☐ Broiler Finishing Feeds	90 grams
☐ Medicated, trouble-shooting Feeds†	90 grams
☐ Supplements, Concentrates	††
LAYER FEEDS	
☐ Breeder Feeds	90 grams
☐ Pullet Developer, Growing-type Feeds	90 grams
☐ Layer Feeds	90 grams
☐ Trouble-shooting Feeds†	90 grams
☐ Supplements, Concentrates	††
SWINE FEEDS	
☐ Sow and Pig Feeds	90 grams
☐ Pig Starters	90 grams
☐ Creep and Pre-Creep Feeds	90 grams
☐ Growing Feeds	90 grams
☐ Finishing Feeds	90 grams
☐ Breeder Feeds	90 grams
☐ Trouble-shooting, Conditioning Feeds†	90 grams
☐ Supplements, Concentrates	††
TURKEY FEEDS	
☐ Starter and Pre-Starter Feeds	90 grams
☐ Growing and Finishing Feeds	90 grams
☐ Mashes, Crumbles and Pellets	90 grams
☐ Trouble-shooting Feeds†	90 grams
☐ Supplements, Concentrates	††

†In first and second line of complete feeds, medicated and trouble-shootings feeds, use 90 grams of pure Arsanilic Acid or one pound of PRO-GEN® 20% Premix per ton of feed to give benefits which only this effective low-cost additive can provide. **One pound PRO-GEN® 20% Premix contains 90 grams pure Arsanilic Acid.**

††Amount of Arsanilic Acid used varies in direct proportion to the amount of grain added or with protein level of concentrate or supplement so that up to 90 grams of Arsanilic Acid is provided per ton of complete feed or of total feed eaten. Complete information in Technical Information Folder—Bulletin No. F-400 entitled "How to Fortify and Label Feeds with PRO-GEN® (Arsanilic Acid)."

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Farm Co-op Expansion, Further Growth Plans Outlined by FUGTA

ST. PAUL—Close to 5,000 Upper Midwest farmers attended the 20th annual meeting of the Farmers Union Grain Terminal Assn. here this week. They heard reports on expansion by their cooperative into such areas as the feed business and also heard a discussion on the matter of taxation of co-ops.

M. W. Thatcher, general manager of GTA, which has grown to be what is said to be the nation's largest grain marketing co-op, told the farmer delegates their association has a current net worth of $35,416,053.

It was announced that GTA distributed $3,449,513 to patrons last year.

GTA pays 20% of its annual savings to its patrons in cash. Mr. Thatcher reported that this amounted to $699,000 for the 1957-58 year. And in the past fiscal year, he said, the cooperative also retired some $667,000 in preferred stock. Thus, GTA paid $1,357,000 in cash to patrons during the year.

Mr. Thatcher also listed some of the additions made to physical properties during the year, and outlined some of the business goals the co-op has targeted for the coming 12 months.

These include the building of 9 million bushels of new terminal elevator storage space at St. Paul, Sioux City, Iowa, and Superior, Wis. In addition, GTA has built or helped finance 14 million bushels of new storage space for affiliated or GTA country elevators in 1958.

Feed Sales Plans

Following the recent purchase by GTA of the McCabe Co., Minneapolis, the co-op has announced an extensive program for the manufacture and distribution of farm feeds, chemicals and similar farm supplies.

Television programs have been planned for January, according to Mr. Thatcher, "to help carry agriculture's story to the general public, and back up the GTA sales and service organization in the farm feeds field."

"Our family of cooperatives has grown and expanded and improved its services," he said, "but, even so, they have a big job to do to integrate among themselves, as well as among farmers."

Elsewhere in his report, the general manager said that in the last fiscal year GTA handled more than 150 million bushels of grain, of which 95 million bushels were country run and the rest handled on government orders. The average daily volume of business handled by GTA was $1.1 million.

Tax Discussions

Irving Clark, member of a St. Paul law firm which serves as general counsel for GTA, said, "The tax campaign against cooperatives will reach a new high pitch this year."

He urged cooperatives to agree on a "sound legislative approach to the tax question," and said "the current efforts of co-op enemies, such as the National Tax Equality Assn., are a serious threat." A 1951 law to clarify the co-op tax situation has been practically nullified by court decisions, he said, further compounding the problem.

Several federal courts have held that cooperative patronage distributions are taxable to patrons, he continued, but only to the extent of their current cash market value. The Treasury Department has agreed. The law previously had been interpreted that patrons were to pay tax on both cash refunds and the face value of co-op securities.

The intent of Congress in the 1951 tax amendment, Mr. Clark said, was for the patrons who received the refund to pay the tax. The court interpretation that this is not necessary on co-op securities with a future market value has thrown the whole matter open to question again, he said, "and the new development has given the opponents of cooperatives an opening, and they can be expected to make the most of it in Congress."

Tax Resolutions

Two resolutions adopted by the GTA convention delegates were related to the tax question. One provided for continuation of the program by which the management of GTA is authorized by the board of directors to pay in cash 20% of the current fiscal year's savings. In addition, stock in GTA is redeemed in full when a stockholder dies or retires from farming and no longer owns or operates a farm in the area served by the association.

The other resolution reaffirmed the co-op's position that patronage refunds, which are paid by farm cooperatives in accord with a pre-existing agreement with patrons, should be taxable at par for the year in which earned whether paid in cash or preferred or common stock. GTA's position, it was stated, is that any non-cash patronage refunds are income to patrons, which income he agrees to invest as capital in the cooperative for his future benefit.

James G. Patton, president of the National Farmers Union, urged continuing efforts toward securing more bargaining power and emphasized that the role of Farmers Union as a general farm organization would include "sponsoring specific proposals for the growth and expansion of the cooperative way."

Marketing Plans

"The best current example," he said, "is the Farmers Union recommendation for a nationwide system of marketing and processing facilities to be financed on the REA pattern and to be owned and controlled by farmers themselves."

Roy F. Hendrickson, executive secretary of the National Federation of Grain Cooperatives, told the farmer delegates the possibility of a new farm program coming out of the 86th Congress is slight.

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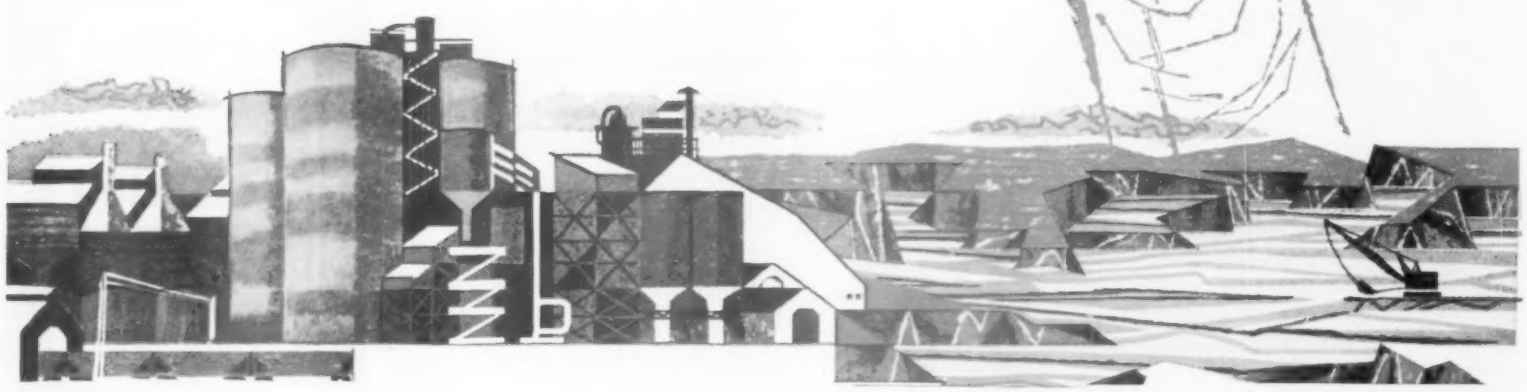

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Fred Bostock Neil McClarnan

APPOINTMENTS — Crown Zellerbach Corp. has announced the appointment of Neil McClarnan as northern regional sales manager, multiwall bag sales division. Headquartered in Chicago, Mr. McClarnan will direct Crown multiwall sales staffs in Minneapolis, Columbus, St. Louis, Kansas City, and New York. A veteran of 20 years' sales experience in the multiwall bag field of the Midwest and East, Mr. McClarnan replaces Fred Bostock, who will be transferred to San Francisco company headquarters as western regional sales manager with responsibility for coordination of Crown multiwall sales offices in Seattle, Portland, Los Angeles, Salt Lake City and Denver.

Certified Hogs Gain Faster On Less Feed

CLEMSON, S.C.—Further evidence that the meat-type hog makes money for the swine producer has been obtained in three years of testing at the South Carolina Agricultural Experiment Station.

The station reported recently in its publication, South Carolina Agricultural Research, that the meat-type hog not only gains faster than his lard-type fellows, but on less feed.

Tests were begun at the station in 1954 to help purebred swine producers check performance of their herds. The test requirements corresponded to those recommended by all breed associations. A total of 68 pigs was tested during the three years. They represented Hampshire, Poland China, Berkshire, Landrace, Yorkshire and O.I.C. breeds in South Carolina. All were tested for production registry requirements, rate of gain and carcass measurements.

The test has been open to all purebred breeders for their spring-farrowed pigs. In order to qualify, the breeders were required to raise eight or more normal pigs to weaning age and production registry weight. This weight is set by each breed association and must be verified for each entry.

Producers who raise litters meeting these requirements could then select two pigs and send them to Clemson where the two pigs are fed individually to obtain rate and efficiency of gain. Each pig must reach 200 lb. in 180 days or its equivalent. At 200 lb., each animal is taken to the college meat laboratory where it is slaughtered and checked for carcass measurements.

Summarizing the results of the first three years of testing, the station reports that 21 of the 68 pigs were ultimately certified. Of these 21, only two pairs were litter mates. Therefore, only two litters met all the requirements for certification. The test shows that pigs qualifying on other requirements did so in less time and on less feed than those that failed to meet one or more of the requirements.

The data showed that the animals which won certification were ahead of the others in the following averages (certified listed first): days on feed, 92.5, 104; daily gain, 1.64 lb., 1.50 lb.; pounds of feed per pound of gain, 3.49, 3.68; length of carcass, 29.1 in., 29.1 in.; backfat thickness, 1.45 in., 1.51 in.; area of loin eye, 3.84 sq. in., 3.37 sq. in.; per cent lean cuts, 47.10, 46.10; per cent primal cuts, 61.43, 60.37.

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HAMMER MILL CAPACITY INCREASED WITH PNEUMATIC COLLECTING SYSTEM

Test data showing up to 34% capacity increase for hammer mills equipped with pneumatic, negative pressure collecting systems was disclosed recently by Sprout-Waldron. All tests were conducted by an independent firm on eight identical model hammer mills equipped with $\frac{5}{32}$" perforated screens and direct connected to 100 hp, 1800 rpm motors.

The hammer mills with the Pneu-Vac® systems permitted the grinding of corn at 12 tons per hour, whereas those with the centrifugal fans could only produce 8 tons per hour. In the grinding of ¼" diameter alfalfa pellets, capacity was increased from 5 tons per hour with the centrifugal fan to 7 tons per hour with the Pneu-Vac system; and in the grinding of oats, capacity was increased from 4 tons per hour to 6 tons per hour. In terms of pounds per hour per horsepower, the percentage increases with the Pneu-Vac system show 34.4% on corn, 25% on alfalfa pellets and 34.4% on oats.

Further details on request.

—— SW ——

JUNIOR PELLET MILL

The S-W Model 500-B Junior Pellet Mill, a smaller version of the famous Pellet Ace® is described and illustrated in Bulletin No. 165. Retaining all the major design features of its larger counterpart, the Junior requires less horsepower and utilizes a smaller die with the result that its capacity rating are lower than the Ace. Where requirements are small, or a high quality pellet mill is needed for pilot plant work, the Junior is ideal.

CENTRAL JERSEY CO-OP TRIPLES FLEET OF FEED PIPER® TRUCKS

One of the pioneers in bulk feed handling, Central Jersey Farmer's Cooperative Association of Hightstown, New Jersey, has converted its members to using one of the most important innovations in low-cost feed delivery in the history of milling: bulk feed delivery.

Ever since the first installation of bulk feed handling in 1954 the use of bulk feed has grown so extensively that the Central Jersey plant has had to triple its fleet of Sprout-Waldron Feed Pipers in order to meet the growing demands for bulk service.

Bulk Feed Load—Gravity loading system weighs each customer's order into separate compartment of truck.

By 1955 the fleet had grown to five and soon, over 50% of production was in bulk feed. This percentage has continued to soar until today they are producing 80% of the feed in bulk and require a fleet of 12 Feed Pipers to handle the demand. An estimated savings per bag, made by Manager Eli Block in 1954, of eight cents, has also soared with production figures to a present savings of 22 cents per bag.

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After having used bulk feeding for three years one user had this to say: "The minute I decided to take bulk I was ahead. And any feed manufacturer is behind every minute he doesn't have bulk."

With a bulk system it is possible to produce more feed more efficiently, and in turn sell more feed less expensively. With this savings and convenience the poultryman can raise more hens and feed them with less effort.

FP/112

Amino Acids—Part 3

THE USE OF AMINO ACID VALUES IN FORMULATION OF FEEDS

By Dr. H. S. Wilgus
The Ray Ewing Co.

EDITOR'S NOTE: This is the third in a weekly series of articles on amino acids in animal nutrition. Various aspects of this subject were discussed at the 1958 annual meeting of the Animal Nutrition Research Council in Washington, D.C., and papers presented at the meeting are being published in Feedstuffs. Dr. H. S. Wilgus of the Ray Ewing Co., Pasadena, Cal., discussed the use of available information on amino acid values in formulating feeds. The accompanying article is from his talk at the ANRC meeting. Papers on amino acid requirements of poultry and of swine and cattle will follow.

The current rebirth of interest in amino acids may be ascribed to the necessity of rations capable of consistently highest efficiency. It is being increasingly recognized that adequate amino acid balance is necessary in rations not only for broilers but also for all non-ruminating animals of all ages and purposes.

TABLE 1. Deviations in Tables of Average Amino Acid Values.

Source	Meth.	Cystine	M+C	Lysine	Glycine
	%	%	%	%	%
Corn					
NRC	.14	.15	.29	.3	.4
A	.18	.16	.34	.2	.3
M-D	.20	.15	.35	.3	..
Ms	.15	.14	.29	.2	.3
C	.18	.18	.36	.2	.3
Suggest	.17	.16	.33	.2	.3
Milo					
NRC	.16	.20	.36	.3	..
A	.16	.15	.31	.3	..
M-D	.16	.20	.36	.25	..
Ms	.15	.20	.35	.25	.4
C	.16	.15	.31	.3	..
Suggest	.16	.15	.31	.3	.4
Corn gluten meal					
NRC	.92	.68	1.60	.7	2.1
A	1.00	.60	1.60	.7	1.5
M-D	1.00	.70	1.70	.7	..
Ms	1.00	.60	1.60	.8	1.5
C	1.00	.70	1.70	.8	1.5
Suggest	1.00	.70	1.70	.75	1.5
Cottonseed meal (41%), Solvent					
NRC	.60	.86	1.46	1.6	2.3
A	.65	.86	1.51	1.8	2.3
M-D	.70	.80	1.50	1.2	..
Ms	.50	1.00	1.50	1.6	2.4
Suggest	.65	.85	1.50	1.9	2.3
Fish meal (60%)					
NRC	1.80	1.00	2.80	5.4	4.0
A	1.80	1.10	2.90	5.5	4.2
M-D	1.80	.63	2.43	4.0	..
Ms	1.80	.63	2.43	5.3	4.0
C	1.80	.94	2.74	6.0	4.4
Suggest	1.80	.95	2.75	5.5	4.2
Meat & Bone Scrap (50%)					
NRC	.70	.60	1.30	2.7	2.0
A	.65	.64	1.29	3.4	7.3
M-D	1.00	.60	1.60	2.8	..
Ms	.90	.60	1.40	3.8	2.2
C	.70	.60	1.30	3.5	7.5
Suggest	.70	.60	1.30	3.5	7
Soybean Oil Meal (50%)					
NRC	.70	.74	1.44	3.1	8.4
A	.70	.74	1.44	3.2	2.7
M-D	.86	.68	1.54	2.7	..
Ms	.87	.69	1.56	3.2	2.8
C	.74	.83	1.57	3.2	2.9
Suggest	.75	.80	1.55	3.2	2.8

NRC—Pub. 301, 1954.
A—Almquist, 1957.
M-D—Maryland, 1956, and DuPont tables.
Ms—Monsanto table.
C—Cornell table, 1958.

The nutritionist formulating rations is faced with serious difficulties in attempting to provide optimum amino acid patterns:

1. Requirements of young chicks, poults and pigs and of laying hens for the essential amino acids most likely to be low in practical rations have been fairly well established, but those for the later growing periods are lacking or fragmentary.

2. Such requirements tend to increase with increasing dietary protein levels.

3. An excess of one amino acid may increase the requirement for another one and may depress growth.

4. Source of carbohydrate may influence apparent requirements. Simple forms, such as sugars, seem to require more than those in grains.

5. Increasing energy levels in the ration tend to increase amino acid requirements in proportion, a situation complicated by lack of universally accepted energy values.

6. Levels of other nutrients may influence amino acid responses. For example, a slight deficiency of vitamin B_{12}, choline or sulfate may cause diversion of some methionine from structural purposes to other metabolic functions; niacin inadequacy similarly influences tryptophane.

7. There appear to be breed differences in respect to amino acid requirements.

8. There is a lack of agreement in certain amino acid values appearing in tables of average ingredient analyses prepared by different authorities (Tables 1, 2).

9. Variations in amino acid constitution of an ingredient may inherently occur and may be impaired by storage and processing.

10. Methods of assay generally used do not always reflect the biological usefulness of availability of an amino acid.

Using Existing Knowledge

While awaiting usable solutions to these problems from research laboratories, the practical nutritionist can make excellent use of existing knowledge by utilizing judgment and logical assumptions, tempered by experience. To this end, the following comments are offered on the above points.

A. Amino acid requirements are discussed in detail elsewhere on this program. (See other articles in this series.)

B. Formulating rations on the basis of amino acid adequacy rather than in terms of protein or to meet arbitrary protein levels will expedite attainment of better biological efficiency and help avoid the influence of excesses and inadequacies.

C. The energy content of the assay rations on which amino acid requirements are determined should be given so that the amino acid levels in a given ration may be adjusted in proportion to the extent to which the energy content of the desired ration influences feed intake above or below that expected from the energy content of the assay ration.

TABLE 2. Deviations in Calculated Analysis of Broiler Rations, Using Several Tables of Ingredient Analyses.

Both rations calculated to contain 23% protein, 960 cal. P. E. (Fraps), 980 cal. P. E. (Titus), 1.2% calcium, 0.4% inorganic phosphorus

Source	Meth.	Cystine	M + C in Diet	Protein	Meth. to add
	%	%	%	%	%
Ration 1—5% menhaden meal, 28% deh. s.b.o.m., 2% grease, 59% corn					
NRC	.38	.35	.73	3.2	.07 (.04)
A	.40	.36	.76	3.3	.04 (.05)
M-D	.46	.32	.78	3.4	.02 (.02)
C	.41	.39	.81	3.5	.00 (.02)
Ration 2—36% deh. s.b.o.m., 4% grease, 53% corn					
NRC	.33	.35	.69	3.0	.11 (.08)
A	.35	.36	.71	3.1	.09 (.10)
M-D	.43	.33	.76	3.3	.05 (.05)
C	.37	.40	.77	3.4	.03 (.05)

NRC—Pub. 301, 1954.
A—Almquist, 1957.
M-D—Maryland, 1956, and DuPont.
C—Cornell, 1958.
( )—Replacing 40% corn with 40% milo.

D. Metabolizable energy appears to be the most practical expression of caloric value for the feed formulator.

E. Average values for amino acid composition of feed ingredients should be brought into agreement and revised at frequent and regular intervals. These should include the synthetic sources in terms of true amino acid activity.

F. Greater use should be made of assays, such as water-soluble nitrogen (cottonseed meal), protein digestibility (fish and meat products) and available lysine, as indicators of the biological availability of the amino acids in processed ingredients. Acknowledging their limitations, these assays can aid processors in improving their products and control laboratories in ascertaining sources of properly processed ingredients.

G. Due consideration should be given to other major nutrient contributions when comparing the relative cost of different ingredients as sources of an amino acid (Table 3).

Regimentation of thought or action is not advocated or implied by these remarks. However, some degree of uniformity should be achieved in the expression of our scientific knowledge on a practical plane so that application on a more accurate basis can be attained by the feed nutritionist.

TABLE 3. Interchanging Menhaden Fish Meal and Dehulled Soybean Oil Meal.

	Calories M.E.	Calories P.E.-F	Calories P.E.-T	Protein	Calcium	Inorg. Phos.	Meth. Cystine	Lysine
				%	%	%	%	%
5% Fish meal	50	45	47	3.10	.25	.17	.137	.275
4% Corn	64	46	44	.34	..	..	.013	.008
Total	114	91	91	3.44	.25	.17	.150	.283
6.75% Soybean meal	77	43	53	3.44	..	..	.105	.216
1% Dicalcium phosphate	..	..	..	..	.26	.18	..	..
1.25% Tallow	41	36	36	..	..	..	..	..
Methionine	..	..	..	..	..	..	.045	..
Total	118	79	89	3.44	.26	.18	.150	.216

M.E.—Metabolizable.
P.E.-F—Fraps productive.
P.E.-T—Fraps productive corrected by Titus.
Methionine and cystine, using suggested values, Table 1.

MIDWEST CONFERENCE — Ruminant and small animal nutrition and health and veterinary-industry relations were among the subjects discussed at the Midwest Veterinary-Nutrition Conference at Kansas City. Speakers at those sessions are pictured here. Left to right in the first photo are speakers at the session on ruminant feeding and health and the session on cooperation between feed men and vets: Dr. C. B. Knodt, Cargill-Nutrena Research Farm, Elk River, Minn.; Dr. B. F. Barrentine, Mississippi State College; Dr. Frank B. Young, Iowa Veterinary Medical Assn., presiding; Dr. John B. Herrick, Iowa State College; Dr. W. E. Poley, Zip Feed Mills, Sioux Falls, S.D.; Dr. John Aiken, veterinarian at South Sioux City, Neb., and Dr. James Magilton, David City, Neb., vet. In the second picture are experts on small animal nutrition who spoke: Dr. C. M. Cooper, editor of "Veterinary Medicine," Kansas City, who presided; Dr. G. T. Edds, Fort Dodge (Iowa) Laboratories; Dr. Hovey M. Burgess, General Foods Corp., Battle Creek, Mich., and Dr. Lester E. Fisher, Berwyn (Ill.) Small Animal Hospital.

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Poultry Nutrition and Health Discussed at Midwest Event

KANSAS CITY—Poultry nutrition and health was one of the main general topics under discussion at the recent Midwest Veterinary-Nutrition Conference in Kansas City.

The conference, held Dec. 8-9, was sponsored by the Midwest Feed Manufacturers Assn. and the state veterinary medical associations of Iowa, Kansas, Missouri and Nebraska. Nearly 300 feed men and veterinarians turned out for the event. (An earlier report on the conference appeared in Feedstuffs Dec. 13.)

Small animal nutrition, as well as poultry and livestock nutrition, was discussed at the conference.

Following are summaries of and excerpts from the poultry and small animal session talks by nutrition and health experts.

POULTRY NUTRITION AND HEALTH: College nutritionists, a veterinarian from industry and a practicing veterinarian were the speakers at the poultry session.

The Role of Nutrition and Management in Growth and Production: Nutritional and management problems in handling growing pullets and laying hens were discussed by Dr. H. R. Bird, head of the University of Wisconsin poultry department. Excerpts from his talk include:

"There is a rather general belief that laying hens in cages need a special type of mash. My own experience with cages, which covers a period of 20 years, convinces me that any all-mash ration which is satisfactory for floor pens is also satisfactory for cages. There may be environmental factors associated with some cage operations that require a special mash, but the mere fact that birds are kept in cages does not dictate a special 'cage layer mash.'

"My (previous) reference to the danger of diluting protein by feeding too much grain may be difficult to reconcile with results published from our own laboratory showing that the protein requirements of layers and growing pullets are lower than generally accepted figures. The tendency in the future will be to feed less protein and more energy to layers and to pullets in the later stage of growth, but there are some pitfalls associated with this change that need to be better understood before we depart too far from present practices. In the meantime, anyone who thinks he can improve on the manufacturer's recommendations for use of a feed is betting against the odds.

"Very high energy levels are likely to cause feather-picking in either chicks or hens. In chicks the energy-protein ratio is important, and feather picking can be prevented or corrected by restoring the proper balance between energy and protein. In laying hens the energy-protein ratio is less critical. In our experience hens getting as much as 10% of added fat are likely to pick feathers regardless of protein level."

KEY TO CITY—Dr. Russell E. Rebrassier (left) of Ohio State University, president of the American Veterinary Medical Assn., was given a key to the city when he was in Kansas City to speak at the Midwest Veterinary-Nutrition Conference. On hand to present the key was the mayor of Kansas City, H. Roe Bartle.

Solving Broiler Production Problems: Broiler management and nutritional problems were covered by Dr. E. L. Stephenson of the University of Arkansas animal industry department. Much recent interest, he noted, has been directed to amount of feeder space. Many poultrymen now insist that at least six 5-ft. feeders be used for each 1,000 birds.

Vitamin A is probably the vitamin most often found to be deficient in feed. This is not because of failure to put the vitamin in feed but because of the unstable nature of the vitamin. It may be destroyed by oxidation under certain conditions.

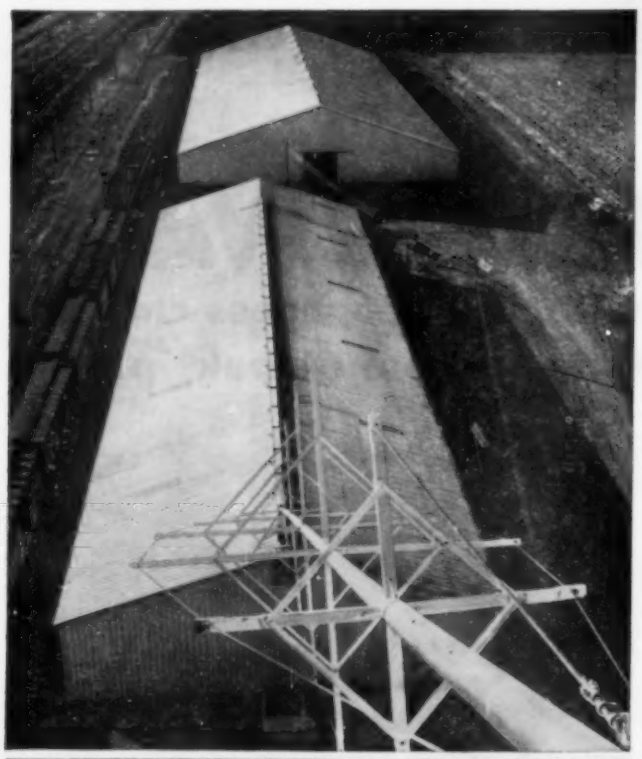
Mineral deficiencies most often observed in the field are those of calcium, phosphorus and manganese. The calcium-phosphorus ratio for broilers should be about 2 to 1. If the ratio becomes much wider or narrower than this, deficiency symptoms may appear.

Certain new antibiotics such as oleandomycin and erythromycin apparently will give growth responses when some of the older antibiotics such as penicillin and the tetracyclines do not. More evidence, however, is needed concerning this. The compound terephthalic acid apparently will enhance utilization of an antibiotic several times, particularly if the antibiotic is a tetracycline. More work, however, is needed.

Meeting Nutritional Needs of Turkeys as Related to Disease Control: Dr. Rollin H. Thayer of the Oklahoma State University poultry science department noted that some Minnesota survey results indicate little progress has been made by the average turkey producer in overcoming many of the problems related to disease, nutrition and management. One important problem is that of stress.

Nutritional deficiencies fall into two categories. In the first are marginal deficiencies which make their appearance because stress factors under today's conditions increase the requirement for these nutrients above recommended levels provided in the ration. The second category involves nutrients which heretofore have been provided in adequate quantities by the amount normally in the feed. Greater genetic potentials for growth

(Turn to POULTRY, page 61)



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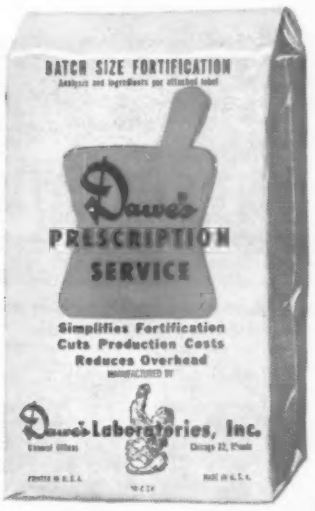

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Relation of Caloric Restriction During the Growing Period to Laying House Performance of Egg Production Type Pullets

"If further research is able to demonstrate that caloric restriction is beneficial, economy may well dictate that this restriction be accomplished through physical limitation rather than by high-fiber diets"

By Dr. J. H. Quisenberry
Texas A&M College

Recent experiments that have been carried out at the Texas Agricultural Experiment Station to determine the relative costs of factors involved in raising egg production type pullets show a decidedly different distribution of these costs as compared with only a few years ago. Table 1 gives the distribution of these cost factors and compares them with similar figures from Florida.

TABLE 1. Distribution of costs for egg production.

Per Cent of Total Cost Per Dozen Eggs	Florida	Texas
Feed	59.5	52.9
Flock depreciation	13.9	20.6
Labor	13.5	14.7
Building and equipment	13.1	5.9
Other	13.1	5.9
Total		100.0

It is obvious from this table that flock depreciation has now become the second largest cost to produce a dozen eggs. Only a few years ago labor was the second largest cost and flock depreciation was a negligible expense. A culled bird could be sold for enough to replace her with a pullet ready to lay. Now flock replacement equals one fifth of the total cost of producing a dozen eggs. With the increased cost of pullet chicks and the low price for market hens, more attention is being given to pullet rearing systems.

Range vs. Confinement

A number of workers have compared range with confinement rearing. Heuser, Norris and Bruckner (1945), and Parker and McSpadden (1943) (1944) found that pasture rearing improved the health of pullets, but Tomhave (1939), Stephenson and Bryant (1944) and Hoffman (1945) found no higher production or better livability in range reared pullets than in those raised in confinement pens. Kennard and Chamberlain (1934), Payne and Gish (1943) and Parker and McSpadden (1943) reported higher egg production and better hatchability of eggs from chickens raised on the range than from those in confinement. Winter and Schlamb (1948) reported no significant difference in body weight, feed consumption or mortality of pullets grown on grass range or confinement during the age period 9-20 weeks. Egg production for the range reared birds was 5% greater and mortality 10% less than that of pullets raised in confinement.

Bailey, Quisenberry and Taylor (1958) reported that range reared pullets reached sexual maturity 8 days later than those in confinement. The range reared pullets were lighter in body weight at 21 weeks but gained more during the laying period. They ate less feed during the rearing period but by 50% production had consumed more feed than the confinement reared birds. There was no difference in rate of production, but the range reared pullets consistently laid larger eggs. (Tables 2 and 3)

Restricted Feeding

Carrick and Roberts (1947) substituted oats and other high fiber feeds for corn in the pullet growing ration and obtained a slower rate of growth and increased feed required to grow a pullet to sexual maturity. Vondell (1943) resorted to mechanical restriction by allowing the feeders to become empty for part of the day and giving no feed one day each week. Vondell's birds had a good grass range and performed well on this restriction. Novikoff and Biely (1945) on the other hand reported that restricted mash feeding resulted in slower growth, more labor and lower subsequent egg production. Milby and Sherwood (1956) reported on an extensive experiment with limited feeding of both Leghorn and White Rock breeds. Restricting the feed of pullets from six weeks of age until the beginning of production to 85% of the feed consumed by full fed birds in confinement and 70% of full fed birds on range significantly reduced growth rate and increased age at sexual maturity by 10-15 days. There was no saving in feed cost to first egg because of the delay in sexual maturity. Restricting the feed had no effect upon subsequent egg production, egg weight on any calendar date, body weight after six weeks of egg production or laying house mortality. Range reared pullets were smoother in appearance than those reared in confinement but did not differ in laying house performance.

It is obvious from these early experiments that the results were not consistent and the optimum method for rearing replacement pullets still was left somewhat in doubt.

Hill and Dansky (1954), Mellen, Hill and Dukes (1954) found that birds fed on lower calorie diets made more efficient use of the calories they consumed. They also found, as did Beadles, Quisenberry, Nakamura and Mitchell (1933) that diets of different caloric value resulted in different compositions of the bodies of the experimental animals consuming these rations. Hill also reported that birds tend to eat to supply their energy needs and thus can be expected to consume much larger quantities of low calorie diets than those possessing high energy values.

Bruins (1958) in a report published in the Sept. 27 issue of Feedstuffs gave results obtained from feeding replacement pullets growing diets of varying energy values. He concluded that the data which he presented showed that high fiber-low energy diets for pullets will: "(1) reduce energy consumption during the growing period; (2) increase slightly the age of sexual maturity; (3) improve the survival of pullets exposed to extreme heat; (4) improve laying house livability; and (5) increase total egg production."

Dr. R. D. Creek of the University of Maryland (1958) in the Oct. 4 issue of Feedstuffs in answer to the question, "Should we restrict feed in growing replacement stock?" concluded that: (1) feed restriction is of little or no value when practiced on Leghorn-type birds; (2) the practice may have some merit in raising broiler strain replacement stock, but the flock owner should not expect miracles.

Difference of Opinion

Again, we see considerable differences of opinion as to the value of restricting caloric intake during the growing period on subsequent laying house performance.

Those who argue that in order to obtain satisfactory laying house performance pullets must be reared just "thus and so" have little basis of fact to support their claims. There are many ways of raising good pullets, and the one which will give us a pullet capable of optimum laying house performance at the minimum cost will no doubt be the one of choice for a given poultryman. One system will not meet the needs of all poultrymen or all geographic areas of the country, and thus I am sure we shall continue to see a number of different pullet rearing programs remain in popular usage.

It has taken a number of years to get poultrymen to go over to low fiber rearing diets with the resultant savings in pounds of feed required to grow a pullet to laying age. Until a few years ago this figure was quoted as being 22-24 lb. In 1956 at the Texas Agricultural Experiment Station 1,800 egg type-pullets representing five different commercially available strains or hybrids were raised by four methods: (1) range, and (2) confinement and each of these subdivided into (1) all-mash groups and (2) mash-and-grain groups. Feed consumed through 21 weeks of age averaged 16.05 lb. per bird. (Table 4) The rations used were typical low fiber starter and growing diets containing no added fat and were made up of high levels of grain sorghums which are cheap sources of energy in the Southwest. Bruins reported averages of 30.5 and 33.0 lb. of high-fiber diets

Dr. J. H. Quisenberry

AUTHOR—Dr. J. H. Quisenberry is head of the department of poultry science at Texas A&M College, College Station. He received his B.S. degree in agriculture from Texas A&M in 1931, his M.S. from the University of Illinois in 1933 and his Ph.D. degree in poultry and animal breeding from Illinois in 1937. Dr. Quisenberry was a research assistant at Illinois before joining the Texas A&M staff in 1936. He later was head of the poultry department at the University of Hawaii and then was named to head the Texas poultry science department in 1946. Dr. Quisenberry is a member of and has been active in several scientific, honor and other groups. He is author or coauthor of more than 50 technical papers and numerous popular articles, and has served in consulting capacities for government and private groups in Mexico and the U.S. His major fields of research have been in poultry breeding, disease resistance, nutritional requirements, effects of hormones on market quality of poultry and effects of whole body irradiation on the domestic fowl.

TABLE 2. Comparison of effects of rearing treatment upon performance in laying cages (308 days).

Characteristics	Range All-mash	Range Mash-oats	Range Av. range	Confinement All-mash	Confinement Mash-oats	Confinement Av. conf.	Difference Range-conf.
Rate of lay, %	63.7	63.6	63.65	62.8	63.5	63.15	0.50
Average egg weight, gm.	56.2	56.0	56.10	54.8	55.3	55.05	1.05**
Lb. feed/lb. of egg	3.168	3.175	3.171	3.178	3.169	3.173	—0.002
Lb. feed/dozen eggs (1st 224 days)	4.523	4.542	4.532	4.388	4.375	4.381	0.151
Average age at sexual maturity	171.1	170.3	170.70	162.5	162.4	162.45	8.25**
Average age at 50% production	180.7	180.0	180.35	172.8	172.0	172.40	7.95**
Average body weight at 147 days (grams)	1363.0	1370.0	1367.0	1458.0	1458.0	1458.0	—91.0**
Aver. body weight, gm.	1829.0	1814.0	1822.0	1798.0	1789.0	1794.0	28.0
Aver. body wt. gain, gm.	673.0	650.0	662.0	527.0	508.0	518.0	144.0**
Mortality, %	11.87	10.00	10.93	12.50	8.75	10.62	0.31

**Significant at .01 level of probability.

TABLE 3. Feed required from hatching to 50% production for five commercial egg production stocks as influenced by feeding and rearing methods.

Feeding and rearing methods	Feed required To 21 weeks	Feed required 21 weeks to 50% production	Feed required Total to 50% production
	lb.	lb.	lb.
Confinement			
All mash	16.17	2.38	20.31
Mash and grain	16.67	2.33	20.76
Range			
All mash	15.28	4.50	21.62
Mash and grain	15.89	3.99	21.78

TABLE 4. Average weekly weights and feed consumption to 21 weeks of age for five commercial egg production stocks.

	STRAIN OR CROSS										Averages of the 5 strains	
	Strain Cross		Inbred Hybrid		Inbred Hybrid		Inbred Hybrid		W. L. Line 50			
Week	Body weight	Feed consumed	Body weight	Feed consumed	Body weight	Feed consumed	Body weight	Feed consumed	Body weight	Feed consumed	Body weight	Feed consumed
	(pounds)											
1	.149	0.1253	.163	0.1203	.152	0.1624	.144	0.1265	.131	0.1190	.148	0.1307
2	.237	0.2160	.257	0.2738	.261	0.2742	.254	0.2703	.234	0.2575	.249	0.2584
3	.370	0.3309	.405	0.3467	.403	0.4437	.398	0.3803	.382	0.3395	.392	0.3682
4	.533	0.4647	.581	0.4496	.569	0.4572	.566	0.4534	.539	0.4429	.558	0.4536
5	.706	0.5267	.762	0.5383	.759	0.5221	.755	0.5414	.720	0.5377	.740	0.5332
6	.887	0.5966	.993	0.7042	.947	0.5928	.944	0.6085	.901	0.5961	.934	0.6196
7	1.081	0.6299	1.187	0.7080	1.089	0.6352	1.167	0.7302	1.066	0.6949	1.118	0.6796
8	1.284	0.7308	1.388	0.7071	1.335	0.7071	1.393	0.6997	1.304	0.6666	1.341	0.7023
9	1.475	0.7302	1.651	0.8550	1.552	0.7930	1.596	0.8362	1.545	0.8248	1.564	0.8094
10	1.675	0.8628	1.871	0.8756	1.727	0.8351	1.810	0.8589	1.752	0.9261	1.767	0.8717
11	1.865	0.8596	2.016	0.8674	1.919	0.8512	1.963	0.9062	1.978	0.9873	1.948	0.8944
12	1.948	0.9882	2.138	0.7658	2.000	0.8338	2.081	0.7875	2.053	0.7640	2.044	0.8279
13	2.076	0.8018	2.316	0.8878	2.112	0.9258	2.192	0.9808	2.131	0.9815	2.165	0.9155
14	2.126	0.9723	2.376	0.8765	2.183	0.7963	2.347	0.9235	2.299	0.9433	2.246	0.9024
15	2.281	0.8450	2.451	0.8970	2.235	0.8645	2.465	0.9568	2.403	0.8865	2.367	0.8900
16	2.407	0.9673	2.571	0.8063	2.351	0.8233	2.553	0.8743	2.483	0.8903	2.473	0.8883
17	2.515	0.8953	2.695	0.8983	2.448	0.9120	2.651	0.8973	2.650	1.0230	2.592	0.9252
18	2.615	0.8283	2.814	0.9875	2.585	0.8970	2.769	1.0058	2.771	1.0763	2.711	0.9590
19	2.735	1.0130	2.907	1.1045	2.709	0.9878	2.947	1.1420	3.041	1.2195	2.868	1.0934
20	2.837	1.1015	3.085	1.1330	2.815	1.0700	3.072	1.1278	3.185	1.1973	2.999	1.1259
21	2.971	1.0898	3.273	1.1648	2.935	1.1768	3.281	1.1648	3.326	1.2480	3.157	1.1688
Totals	2.971	15.5840	3.273	16.0477	2.935	15.5613	3.281	16.2722	3.326	16.6221	3.157	16.0175

TABLE 5. Composition of diets used in caloric restriction pullet development program.

Diet†	I	II	III	IV	V	VI**
	Pounds					
Milo	47.0	25.3	40.25	25.3	25.30	
Corn	20.0	20.0	20.00	18.0	24.25	
Soybean oil meal (44% protein)	17.5	21.0	19.25	22.2	14.25	
Oat hulls	....	18.2	....	....	....	
White grease	....	....	5.0	....	....	
Cane pulp	....	....	....	19.0	....	
Stemmy alfalfa hay (33% fiber)	....	....	....	....	20.7	
Fish meal (65% protein)	1.0	1.0	1.0	1.0	1.0	
Fish solubles	2.5	2.5	2.5	2.5	2.5	
Dried whey	2.5	2.5	2.5	2.5	2.5	
Alfalfa leaf meal	4.0	4.0	4.0	4.0	4.0	
Defluorinated rock phosphate	2.5	2.5	2.5	2.5	2.5	
O. S. flour	1.5	1.5	1.5	1.5	1.5	
Salt	0.5	0.5	0.5	0.5	0.5	
Vitamin mix*	1.0	1.0	1.0	1.0	1.0	
$MnSO_4$, gm.	24	24	24	24	24	
Per cent protein	18.14	18.09	17.80	17.90	17.90	18.14
Calories/lb. (P. E.)	888	671	993	682	750	888

*Supplied per pound of finished ration; 2 mg. riboflavin, 5 mg. calcium pantothenate, 12.5 mg. niacin, 34 gamma vitamin B_{12}, 200 mg. choline, 2,270 I.U. Vitamin A, 681 I.C.U. Vitamin D_3, 2 mg. penicillin, 5 mg. bacitracin, 227 mg. methionine, 56.7 mg. sulfaquinoxaline.

**Same as Diet I except non-pelleted.

†Diets I to V were pelleted to prevent selective eating of ingredients.

consumed by his birds to 20 weeks of age.

Work reported by Couch, Isaacks, Reid, Crawford and Quisenberry from the Texas Agricultural Experiment Station (1957) on the feeding and management of replacement broiler stock hatched on Dec. 6 showed that caloric restriction resulted in reduced body weight, delayed sexual maturity and larger egg size. Many feeding systems have been proposed for accomplishing this caloric restriction. Most of those that have been tried in the past have involved some type of mechanical restriction of feed intake. This method of limiting caloric intake has met with questionable acceptance because of the added labor involved and abuses which have resulted in higher mortality, lack of uniformity in the pullets and doubtful economy in rearing costs. The work reported by Couch et al. attempted to use a high-fiber, self-restricting type of diet. Using low cost sources of fiber in such rations might possibly prove economically feasible.

Egg Production Stock

To determine if high-fiber diets would give similar results with light breed egg production stocks as those obtained with broiler replacement stock a test involving more than 3,600 pullets was made. The birds were hatched March 1, 1957, and all started on a conventional high efficiency well fortified type starter ration and continued on this for the first 9 weeks. At the end of 9 weeks the birds were transferred to range shelters where they had access to a limited amount of Bermuda grass range. After transfer to the range one lot of 100 pullets was continued on a mash and oats feeding program, following the feeding program recommended by Hy-Line Poultry Farms, consisting of approximately 6 lb. of mash and 6 lb. of oats per 100 birds daily. This program is meant to have little or no feed restriction during the early growing period and for the restriction to become increasingly greater as the birds grow older. Since milo has considerably more nutritive value than oats and is usually cheaper the same feeding program was used on another lot of birds substituting milo for oats. An interesting observation was made on this lot as contrasted with the other lots getting higher fiber levels in their rations. The milo fed birds cleaned their ranges of all edible vegetation, presumably searching for additional fiber to fill their digestive tracts. All of the other lots of birds had considerable grass in their range pens, even at the end of the growing period, whereas the milo fed birds had their lots bare several weeks before the end of the growing period.

Ten additional lots of approximately 100 birds each were fed rations with varying caloric values. Five of the lots received approximately the same amount of feed per day. The amount was adjusted weekly and was determined by those in Lot 3 which received Ration No. I, Table 5, containing approximately 18% protein and 888 calories of productive energy per pound. Birds in this lot received approximately all the feed they would consume. Lots 5, 7, 9, 11 received approximately the same amount of feed daily as Lot 3. Lots 4, 6, 8, 10, and 12 received the same rations as 3, 5, 7, 9, 11 respectively but only 70% as much as these lots. Lot No. 11 received Diet No. III, Table 5, containing 5% added fat. This diet had the highest caloric value and the highest C/P ratio of any of the diets. The caloric value of the diets varied from a low of 671 calories per pound (Diet II) to a high of 993 calories (Diet III).

Results

It can be seen from Table 6 that both the mechanical and the fiber restriction reduced the average body weight at 24 weeks. Differences in feed consumption were largely attributable to the mechanical restriction since the lots getting the 6% added fiber diets were limited to approximately the same amount of feed given lots 3 and 4 respectively which received the low fiber diets. There were no significant differences in mortality between the lots.

As shown in Table 7, the caloric restriction not only reduced body weight but delayed sexual maturity by 6-31 days. Mechanical restriction of the low fiber diet and the 5% added fat diet did not delay sexual maturity which suggests that earlier observations, that in this region the summer heat acts as a significant restriction factor upon egg production type birds, are correct. There is no indication that the caloric restriction during the growing period of these birds had any effect upon egg size at 50% production or for the first three months of the experimental period. Mortality during the early period of production showed no consistent relation to the dietary treatment during the growing period. Rate of production showed no significant correlation with rearing treatment except for the delayed sexual maturity of some of the severely restricted groups.

TABLE 6. Body weight and feed consumption of pullets on restricted feeding program (commercial inbred hybrid pullets).

Lot No.	Diet No.	Diet	Average weight 9 wk. lb.	Average weight 24 wk. lb.	Average feed consumption 9 wk. lb.	Average feed consumption 24 wk. lb.	Mortality 9-24 wk. %
1	I	Pellets and oats*	1.32	2.84	4.16	17.30	2.04
2	I	Pellets and milo†	1.42	2.90	4.02	16.47	3.56
3	VI	All-mash	1.54	3.16	4.46	18.89	0.00
4	VI	All-mash (70%)	1.54	2.70	4.46	14.66	3.19
5	V	Basal + 6% fiber (alf.)	1.53	2.98	4.64	19.56	0.99
6	V	Basal + 6% fiber (alf.) 70%	1.53	2.50	4.64	16.02	3.19
7	IV	Basal + 6% fiber (cane litter)	1.53	2.73	4.48	19.42	1.02
8	IV	Basal + 6% fiber (cane litter) 70%	1.53	2.21	4.48	16.27	2.22
9	II	Basal + 6% fiber (oat hulls)	1.52	2.97	4.36	19.96	1.98
10	II	Basal + 6% fiber (oat hulls) 70%	1.52	2.68	4.36	16.73	3.13
11	III	Basal + 5% fat‡	1.49	3.02	4.45	18.97	2.00
12	III	Basal + 5% fat 70%‡	1.49	3.02	4.45	14.35	2.13

*When the chicks were 3 weeks of age oat feeding began and was gradually increased as they grew older.

†At 5 weeks of age the feeding program for these birds was made identical with Lot 1 except milo was used as the grain instead of oats.

‡At 3 weeks of age 5% tallow was added to the diet of these pens.

TABLE 7. Effects of caloric restriction of growing pullets on their laying house performance.

Growing period treatment	Feed consumed to 24 wks.* lb.	Age to first egg days	Egg size at 50% prod. gm.	Aver. egg size for 1st 3 mos. gm.	Hen day prod. Prel. Prd. 8/22-9/23 %	Hen day prod. First 3 periods %	Feed/doz. Prel. Prd. 8/22-9/23 lb.	Feed/doz. First 3 periods lb.	Mort. 9/24-12/16 %
Pellets and oats	17.3	150	49.8	57.6	64.6	79.1	4.09	3.91	0
Pellets and milo	16.5	157	49.1	57.0	52.2	81.1	5.15	3.81	0
All-mash	18.9	147	49.7	57.9	70.0	78.1	3.86	3.86	0
All-mash (70%)	14.7	144	49.6	57.1	55.1	79.1	4.35	3.81	2.5
Basal + 6% fiber (alf.)	19.6	151	49.4	57.6	71.9	77.0	3.87	3.97	2.5
Basal + 6% fiber (alf.) 70%	16.0	168	49.3	59.1	36.3	74.3	6.92	4.11	0
Basal + 6% fiber (cane litter)	19.4	169	50.2	58.9	50.1	75.2	5.00	4.06	5.0
Basal + 6% fiber (cane litter) 70%	16.3	176	48.0	58.8	25.8	74.6	9.60	4.11	0
Basal + 6% (oat hulls)	20.0	154	50.0	59.1	62.7	74.1	4.04	4.05	0
Basal + 6% fiber (oat hulls) 70%	16.7	157	49.9	57.9	42.1	79.7	5.98	3.76	0
Basal + 5% fat	19.0	144	50.0	59.3	65.1	76.9	3.90	3.82	2.5
Basa + 5% fat 70%	14.4	143	48.0	57.2	59.0	80.0	4.23	3.67	0

*At 24 weeks of age pullets were transferred to laying cages and all groups received the same all-mash cage layer diet (17% protein, 920 cal./lb. P.E.) with no restriction of intake.

High-Fiber Trend Questioned

Whether or not fall hatched birds will show beneficial effects from caloric restriction in this area remains to be determined. Birds are now under test to explore this possibility. From the data currently available, considerable question may be raised as to whether or not the trend toward the use of high fiber diets for rearing egg production stocks may not be a backward step. It took several years to obtain acceptance of low fiber diets so that pullets could be raised to 21 weeks on 16 lb. of feed. It will not be economically possible to manufacture, transport and feed 30-33 lb. (as

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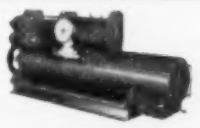
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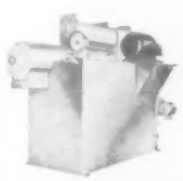
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POPULAR MIXTURE — POULTRY & Ph.D.'S

KNOXVILLE, TENN.—A University of Tennessee study among 3,611 families in 69 counties of the state shows that professional groups of people eat more broiler meat than any other group. More specifically, the study showed that such professional people as teachers, medical personnel, lawyers and public servants ate 28½ lb. of broiler meat each. Miners were found to eat 20 lb. each, the least of any group, while people in agriculture—farmers, foresters, and fishermen—each ate an average of 21 lb. of broiler meat per year. The study further showed that each city dweller consumed about 2½ lb. more broilers a year than did people living in the country. Farm owners ate about 1¼ lb. more per year than farm tenants, and small families consumed more per person than large families.

reported by Bruins) (or 1⅓ times the amount of a low fiber ration as reported in the Texas data) of high fiber feed as economically as 16 lb. of a good ration.

Much of the available data support the convictions held by many poultrymen and scientific workers that heavy breed broiler strain birds require a different rearing program from light breed egg production stocks. One major problem of broiler strain stocks during both the growing and the laying periods is to get large husky birds, able to withstand the stress of heavy egg production without becoming excessively fat and overweight, resulting in lowered egg production, reduced feed efficiency and increased mortality. On the other hand, light breed egg production stocks may come into heavy egg production with a minimum of stored energy reserve and after a few months of high production start to decline prematurely because of inability of the poultrymen to keep the body weight up to normal levels. Energy adjustment of the laying diet at this point might result in maintenance of a high rate of lay for a longer period of time. If the prevention of a body weight decline about the third or fourth month of production were associated with the maintenance of a higher rate of lay over a more extended period, this might account for the observation by the Texas group that caged layers exceeded floor layers in number of eggs produced and at the same time maintained a significantly heavier body weight than the floor housed groups.

If further research is able to demonstrate that caloric restriction is beneficial, economy may well dictate that this restriction be accomplished through physical limitation rather than by high fiber diets. Restricting a given type of bird to a set number of pounds per 100 birds per day will impose very little extra labor upon the pullet grower, and if extra labor is required, perhaps this is one way he can restore a larger share of the consumer egg dollar to his labor and managerial ability which, after all, are his major stocks-in-trade.

v v

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McKesson & Robbins Appointment Made

NEW YORK—James K. Watkins, Jr., has been appointed a vice president of McKesson & Robbins, Inc., New York, according to an announcement by F. Dean Hildebrandt, vice president in charge of the company's chemical department.

Formerly president of Merchants Chemical Co., Inc., acquired by McKesson & Robbins on Nov. 1, Mr. Watkins is a graduate of Princeton University and received his LL.B from the University of Michigan.

USE OF FATS IN FEED IS GROWING

...with the Allied Industry Associa... ...committee regarding the tentative purchasing guides under consideration. With their approval, the following purchasing guides were accepted:

ANIMAL FAT PURCHASING GUIDE

Prepared by the Nutrition Council of the American Feed Manufacturers Association.

Foreword: This purchasing guide is presented to supply a uniform basis for the preparation of the procurement specifications by each purchasing agent. Since conditions and requirements vary greatly in different areas, this guide is not intended to be rigidly followed. Quality limitations may not always be optimal. The purchasing guides will be revised as improved methods of judging quality are available.

Definition: (Reference — Official Publication of the Association of American Feed Control Officials.)
Animal fat is a mixture of fats of a quality suitable for feeding obtained from animal tissues in the commercial processes of rendering. If the product bears a name descriptive of its kind or origin as for example, "lard," "tallow," "beef fat," it must correspond thereto.

Analysis: (Basis American Oil Chemists' Society, current edition unless specified.)

1. Stability: AOM Test (Active Oxygen Method)
20 hours AOM stability is the minimum acceptable and is approximately equivalent to 320 days of storage life.
2. Purity: M.I.U. (Moisture, Impurities, Unsaponifiables)
The M.I.U. is basis 2% unless otherwise specified. Excessive moisture causes rapid deterioration and must be kept out of animal fat. Higher percentages of impurities proportionately reduce caloric values.
3. Antioxidant:
Only approved antioxidants shall be used, and in sufficient quantity to meet minimum stability requirements.
4. Free Fatty Acid: (FFA)
Free fatty acid varies but for feeding purposes, animal fats having a free fatty acid not exceeding 15% are usually selected.

Physical Properties:

1. Color:
Color is an indication of grade, but has little or no effect on feeding quality.
2. Titer: (Approximate Melting Point)
Titer is the solidification point of the fatty acids measured in degrees centigrade. Fat having a titer of 40° C. and above is called tallow. Fat having a titer below 40° C. is called grease.

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Recognizing this problem, the American Feed Manufacturers Association has suggested new standards of quality to guide purchasing agents in buying stabilized animal fats.

By these new standards, the *minimum* acceptable fat stability is set at 20 hours by AOM test. The trend among leading renderers, however, is to produce a 40 hour AOM fat. By so doing, these renderers provide maximum assurance the fats they sell will have sufficient stability, even under adverse conditions.

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In the first place, the Eastman line of Tenox antioxidants offers the renderer the widest choice available. From this broad range he can consider and select the antioxidant or antioxidant formulation best suited to the particular fat he is handling and to his processing conditions.

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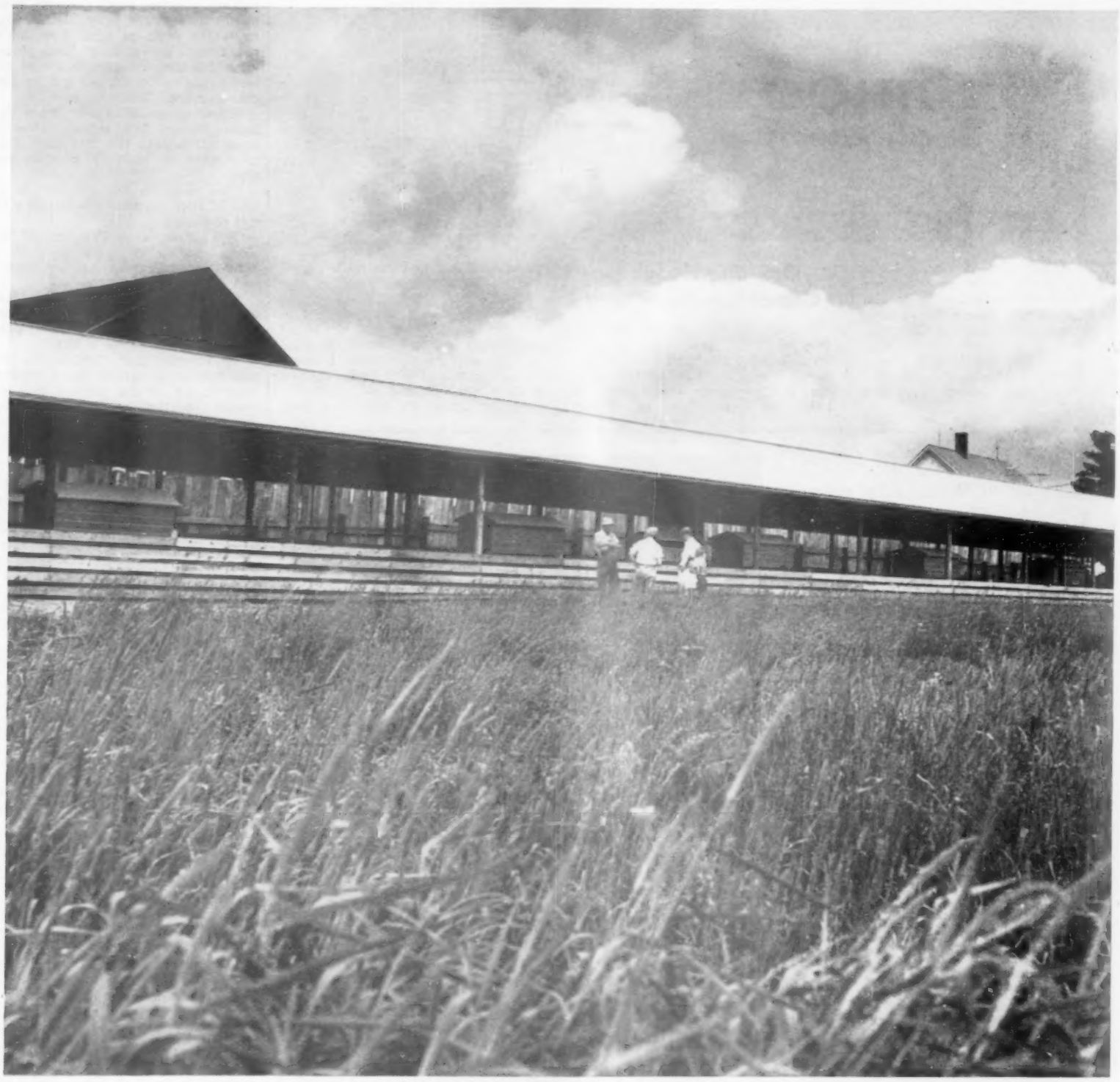

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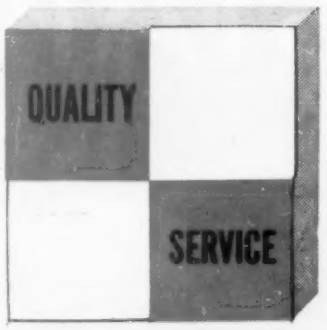

PURINA . . . YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

JOE BROOKS

BY AL P. NELSON

Milt Peters, Pop Henley and the rest of the employees were walking from the Hotel Manitou to the Brooks Feed Mill when a station wagon passed them, its horn honking insistently.

"There go Joe and Grandpa Hodgkins to the feed store," grumbled Milt. "They ride and we walk. It's not fair."

Grandpa Hodgkins Comes Up with an Idea

Pop Henley, the veteran employee, growled. "Darn your lazy hide anyway," he snapped. "You know Grandpa can't walk too well, so Joe drives him in the station wagon from the hotel. Joe feeds all of us at that monthly dinner, and this walk is good for us. Gets the lead out of our brains."

"Yeah, and then when we get to the meeting and we just wanta sit and smoke and relax, then Joe picks our brains for business building ideas," muttered Milt, who enjoyed getting Pop incensed.

"Holy Smokes!" exclaimed Pop, getting angrier every passing moment. "Are you a baby? Don't you know the facts of life? You don't get things for nothing. You gotta work for them! Joe can't afford to feed us big steaks without getting his cost plus back. Wake up, man!"

"There must be easier ways to make money," Milt sighed. "Here I work all day in the feed mill and then have to go to a meeting at night."

"You sleep on the job once in a while!" Pop snapped. "We caught you lots of times."

"Not lately, Pop. I've learned to sleep standing up."

All the employees laughed about this, but Pop merely snorted.

"I understand Grandpa has an idea to bring up tonight—that's why he came," said Smiley Johnson. "Usually he doesn't stay up so late."

"If I was him," Milt put in, "I wouldn't get so excited about coming to work for Joe one day a month as fourth assistant vice president in charge of customer welcoming operations. It just don't seem to be worth all the bother."

"Huh," growled Pop, "you wouldn't understand anyway. There's some people that take pride in being able to do a good day's work for a day's pay—at any age. Some people I know believe in giving, when they take. Others I know are just interested in takin' and not givin' a darn thing in return."

"I resent that!" Milt exclaimed. "You mean to insinuate that I don't earn my pay at this feed mill?"

Pop Henley spat onto the frozen ground. "Earn!" he exclaimed. "I don't think you even know what the word means."

"Hey, you fellows, quit arguin'," said Smiley Johnson. "Joe's standin' outside waitin' for us."

Glowering at each other Pop Henley and Milt moved into the big, warm feed room where a number of folding chairs had been placed in an open space.

When the employees had been seated—14 men in all, from the main Hansen's Creek mill and the Endeavor branch—Joe smiled warmly and said,

"Fellows, Grandpa Hodgkins, our one-man promotion department, has come up with an idea which I want to present to you for discussion. Grandpa will you tell us about it?"

Grandpa's Idea

Grandpa, a man of medium height, with flowing grey hair, gold rimmed glasses and a trimmed goatee, was clad in a neat serge suit and sported a reddish tie on a white shirt. He was a snappy looking old fellow even though he wore a hearing aid and his shoulders were bent a little from more than 50 years of hard labor.

"Boys," said Grandpa in a firm voice, his blue eyes alert, "let me say this—if only I had been born 50 years later. Then I'd be right in my prime now, and man, would I go to town and make money. I kin never figger out why I was so slow and easy goin' when I was young, and now when I'm old I'm gettin' such young ideas."

"What kind of young ideas?" asked Milt impishly.

"Not what you think," came back Grandpa, "but let me give you fellers a word of advice. Don't delay gettin' the lead outa your feed sacks, men. Pitch in and work like heck. Help

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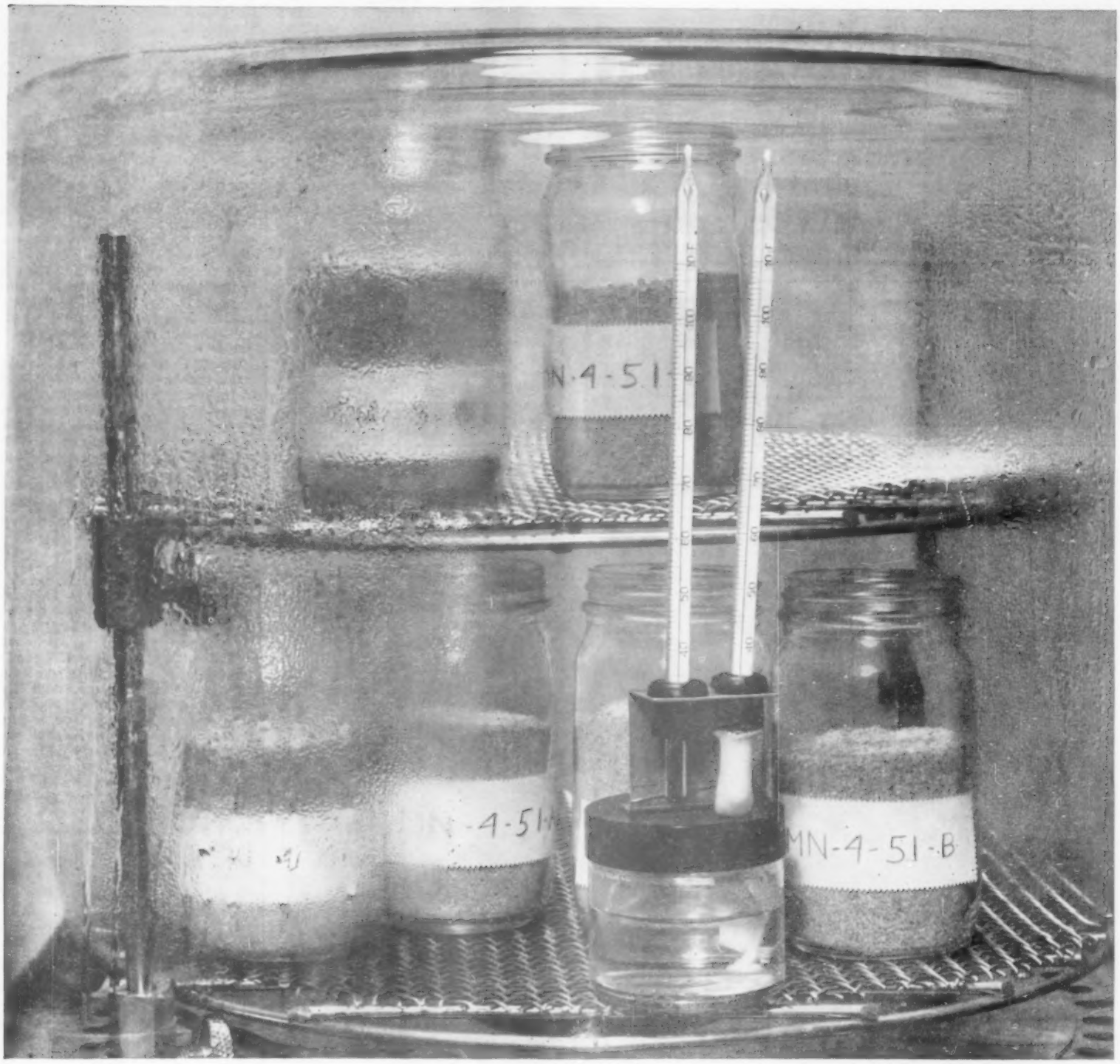

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Joe build this business, for every extra dollar worth of merchandise you sell makes your pay incentive checks bigger every month. Heck, when I was young we had no such things. If your boss wanted you to work 18 hours a day in harvest time, you worked. That was it, and you got no extra pay. Overtime? Incentive pay? Bah, nobody thought of it."

Joe chuckled. Grandpa was laying it on the line for the employees in a way which he, Joe, didn't dare do directly.

"No, us old fellers that come here once in a while to play cards and talk about world affairs in Joe's mill," said Grandpa, "are workin' our heads all the time. We wanta pay Joe back for his hospitality, coffee, heat and concern. So we come up with an idea. Old man Glaser who went to visit his son-in-law, who is a builder-contractor at Appleton, Wis., says there's an alert lumber company up there. This lumber dealer takes contractors to a baseball, football, basketball or a hockey game, and stands all the costs. It's his way of advertisin'. He gathers about eight of these contractors into his station wagon, drives to the city where the game is, takes the men to a dinner and then they go to the game and have a wonderful time."

The employees listened eagerly as Grandpa unfolded his idea.

Take 'em to a Game

"Now I got to thinkin', why can't Joe do the same thing? Let's say he draws up a list of his 30 best dairy feed customers, 30 hog feed customers, 30 poultry feed customers and 30 cattle feed customers. He arranges their names alphabetically. Then he invites eight of these men at a time to go to a good football game, or a basketball or baseball game."

"Each customer in turn gets a chance to go?"

Grandpa nodded. "Yep. Joe kin make such a trip maybe for $50. If he makes 10 trips a year like that it means $500 and he shows 80 farmers a good time. Joe kin easily work that in on his 2% ad budget. Lots of farmers like to get away for a good time like this."

"You forgot one thing," put in Milt. "Some farmers would maybe rather go to a burlesque show than a baseball game. Would Joe go for a deal like that?"

"No," said Joe quickly. "That's out. Besides, I don't think there's a midwest burlesque show anywhere except Chicago. That's too far and it wouldn't be good advertising for me, either."

"I like the tour idea," Smiley Johnson said. "It would be something different and farmers would talk about it. Every customer would get his chance to go over a two or three year period. But you forgot one category. How about all the old maids who buy pet foods from us? Won't they feel slighted on this deal?"

"Oh," spoke up Milt, "Joe could line up some trips for them to visit art museums in Minneapolis or Milwaukee. And Pop could be the chauffeur. He's courteous to women. But maybe it would be wise to have a separate chaperone in case Pop gets out of line."

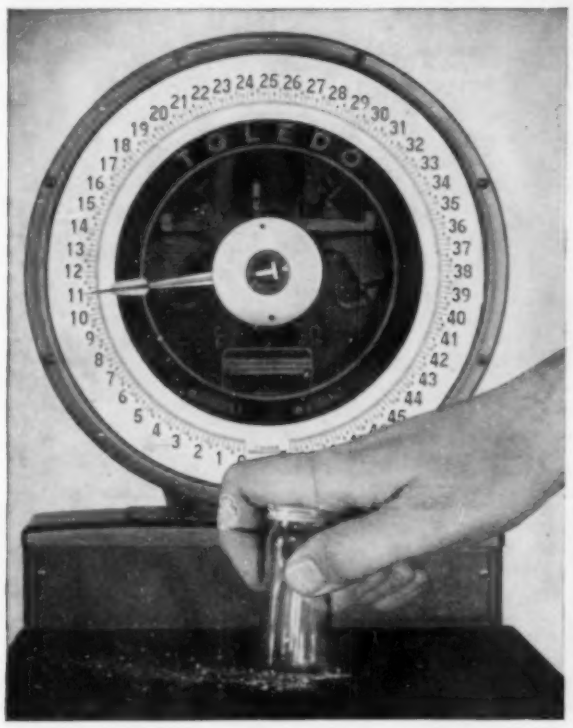
"I'm always in line, you-you whippersnapper!" exploded Pop, his face red as a bet. "That's more than you can say. If you spent 10% of the time thinking up business ideas that you waste thinking of women, especially those, those red heads of yours, you'd be farther ahead."

"I would not," retorted Milt. "It all depends on what you consider waste. I haven't got to that point yet."

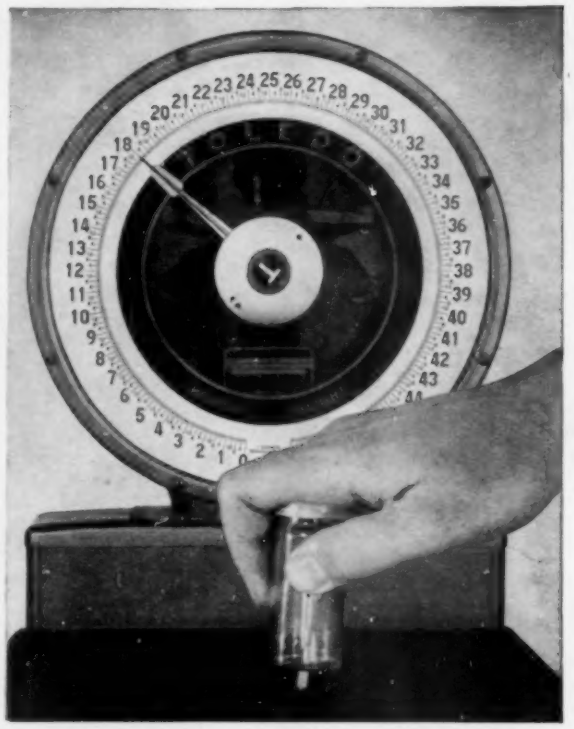
Pop got up quickly and grabbed his hat. "I'm leavin', Joe. Grandpa has a good idea, but when that hairbrained Milt starts his foolishness, this guy calls it a night." And out he stomped slamming the door behind him.

When the laughter had died down, Joe said soberly: "Men, I'm not one to cut out all fun at a sales training meeting, so long as we come up with a workable business building idea like Grandpa's. You bait Pop a lot, Milt. It'll have to come to a stop. So take this as a warning."

"All right," sighed Milt shrugging his shoulders. "I'll try to conform, even though my soul rebels against it."



Without Micro-Cel, feed pellets break up under slight pressure as standard squeeze test shows. Result is more "fines," shipping problems and customer complaints.



Micro-Cel treated pellets stand up under much greater pressures, are actually 33⅓% to 65% harder. Bulk-loaded or bag-packed pellets reach customers in better condition.

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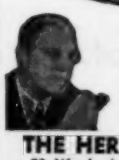

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Phenothiazine Treatment of Yearling Beeves on Winter Pastures

● H. H. Vegors, W. N. Smith, D. M. Baird, H. Ciordia, W. E. Bizzell and O. E. Sell, Georgia Experiment Station; American Journal of Veterinary Research, Vol. 19, No. 73, pp. 805-810, October, 1958.

ABSTRACT

Three winter grazing trials were conducted with grade Hereford yearlings during successive years to evaluate various types of pastures and to determine the effect of phenothiazine treatment for the control of roundworms. In the first year temporary pasture (mostly oats) and crimson clover were compared. In the second, temporary, rye grass, and poor quality crimson clover (mostly cheat grass) were used. In the last year, fescue, rye grass-crimson clover, and temporary pastures were evaluated.

In all trials the animals were allotted to two groups for each type of pasture on the basis of age, parasite level (as indicated by fecal egg counts), weight and feeder grade. Each animal in one of the groups on each type of forage was drenched at 28-day intervals with 55 gm. of phenothiazine in 1954, and with 60 gm. in 1955. In 1956, each animal in these groups received 60 gm. of the drug at the beginning of the test and again four months later.

In the first two years the treated groups had continuous access to a mineral block containing 7.5% phenothiazine (one part of the drug to 12 parts of mineral composed of limestone, bone meal and salt). In 1956, the treated groups had access to a loose mixture of 3 parts salt, 3 parts bone meal, 3 parts limestone and 1 part phenothiazine.

The untreated groups received loose salt and bone meal in addition to the respective forages. Forage samples were collected from each of the pastures and were examined periodically for number of larvae present. At the start of the tests the calves averaged about 500 to 550 lb. liveweight and were from 10 to 12 months of age.

Fecal egg counts were made every 28 days with large numbers of eggs counted by the dilution technique and small numbers by means of the flotation technique of Stoll. Necropsy studies were made at the end of the grazing season on 2 or 3 animals selected from each lot on the basis of age and weight.

The results showed the phenothiazine treatment in 1954 increased daily gains of the calves on crimson clover 0.2 lb. per calf per day at an average consumption of 1.03 gm. of drug per calf per day. Administration of an average of 0.44 gm. per day of phenothiazine in the mineral block was insufficient to evoke any difference in gains on the temporary pasture. The animals were on temporary pasture 146 days and crimson clover for 111 days.

In 1955, the animals on the crimson clover consumed an average of 2.09 gm. per day of the drug with a range of 1.27 to 3.15 gm. for the 56 days on test. On temporary forage, an average of 0.70 gm. for the 98 day trial was consumed with a range of 0.23 to 1.21 gm. Reduction in larval numbers occurred on the two pastures, but the number of stomach worms recovered from the animals on the crimson clover forage was double the number in untreated animals. On the rye grass pasture, there was no reduction in parasitism in the treated animals or no effect on larval contamination of the pasture was seen during the 56 day period during which an average of 0.54 gm. of the drug was eaten. No evidence was seen during the relatively short periods of the 1955 trial of an increased gain response due to phenothiazine treatment.

In 1955-56 the temporary pasture animals were on trial for an average of 152 days, those on rye grass-crimson clover for 111 days, and those on fescue for 152 days. Some hay had to be fed to the animals on all pas-

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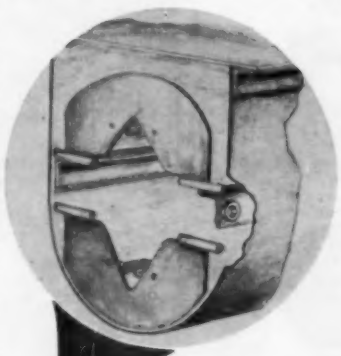

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tures because of an extended drouth during the month of January. This hay feeding was discontinued to the animals on rye grass and temporary pastures in mid-February, and to those on fescue in mid-March.

The cattle consumed considerably more loose mineral-phenothiazine mixture than had been consumed in previous years from the phenothiazine-mineral blocks. Those on temporary pasture consumed an average of 1.74 gm. daily, on the rye grass and crimson clover pasture 2.79 gm., and on fescue 2.36 gm. The animals on the rye grass-crimson clover and fescue pastures had a lowering of parasitism and also the ineffective larvae numbers on the pasture were reduced. Although those on temporary pasture had fewer larvae and adults at necropsy, due to the lower drug consumption the larval contamination on the pasture was not affected. Those animals on fescue which received the treatment gained at a significantly faster rate (1.62 vs. 1.81). On the other hand, those on rye grass-crimson clover gained at a slower rate than untreated controls (2.74 vs. 2.57).

COMMENT

The general conclusion from this experiment is that the low-level feeding of the drug was not of economic benefit, except to those animals grazing on fescue forage. The variance in daily gains was more easily explained by the variations in the nutritional adequacy of the various forages rather than by the action of the drug.

It appears that in order to reduce both the larval infestations of pastures as well as the parasite load within the animal an intake of more than 2 gm. daily of the drug per animal is necessary. This last point is probably of more importance with nutritionally poor pastures than those which are lush and of good feeding value. Also, the form in which the drug is administered is of some importance, since in this experiment at least, the desired consumption was not achieved by the use of blocks.

North Carolina Feed Tonnage Up Sharply

RALEIGH, N.C.—North Carolina has a strong start toward a new record in feed tonnage this fiscal year.

This was indicated in a recent report from the North Carolina Department of Agriculture covering the July-October period of the 1958-59 fiscal year.

The report shows tonnage to date of Oct. 31 as 538,897, a boost of 24% over the 433,258 recorded for the same period a year earlier. Every month of the period this year showed a strong increase over 1957. The sharpest increase was in July when tonnage was 30% ahead of a year earlier.

G. Sanford DeBeck

Fred B. Douglass

Superior Separator Co. Appointments

MINNEAPOLIS—The appointments of G. Sanford DeBeck and Fred B. Douglass to new positions in the grain and seed section of the Process Machinery Division of Superior Separator Co. has been announced by C. F. Pierson, president of the company, Hopkins, Minn., manufacturer of processing machinery for the grain, seed, hybrid corn, malting and milling trades. Mr. DeBeck was named general manager and Mr. Douglass, sales supervisor for North and South Dakota, Montana and western Minnesota.

Mr. DeBeck, an engineering graduate of Iowa State University, Ames, was, for the last four years, manager of the electronic services department of the Remington Rand Univac division of Sperry Rand Corp., responsible for maintenance of large scale computers.

Mr. Douglass joined Superior in 1941 in a sales and service capacity, covering the spring wheat territory. He has served as assistant to the divisional sales manager, selling to malt houses, terminal elevators, seed plants and hybrid corn plants. Recently he was in charge of the company's new grain and seed testing laboratory in Hopkins.

Broiler Industry Growth Is Topic of Address

FEDERALSBURG, MD. — The growth of the broiler industry was the topic of a talk by John R. Hargreaves, Federalsburg, general manager of Caroline Poultry Farms, at a recent meeting of the Federalsburg Rotary Club.

He pointed out that 34 million commercial broilers were raised in the U.S. in 1934, and that in 1958 about 1.7 billion were raised. The industry has doubled itself each five years for the last two decades, he said.

Mr. Hargreaves said he is optimistic about the future, and sees 1975 as a year when 4 billion broilers will be marketed. He said that population increases, the rise in incomes and better selling methods should bring this about.

The speaker mentioned that he was proud the industry has never asked for financial help from the federal givernment, and added that he "hopes it never will."

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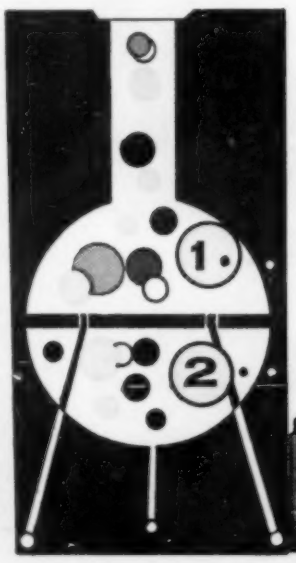

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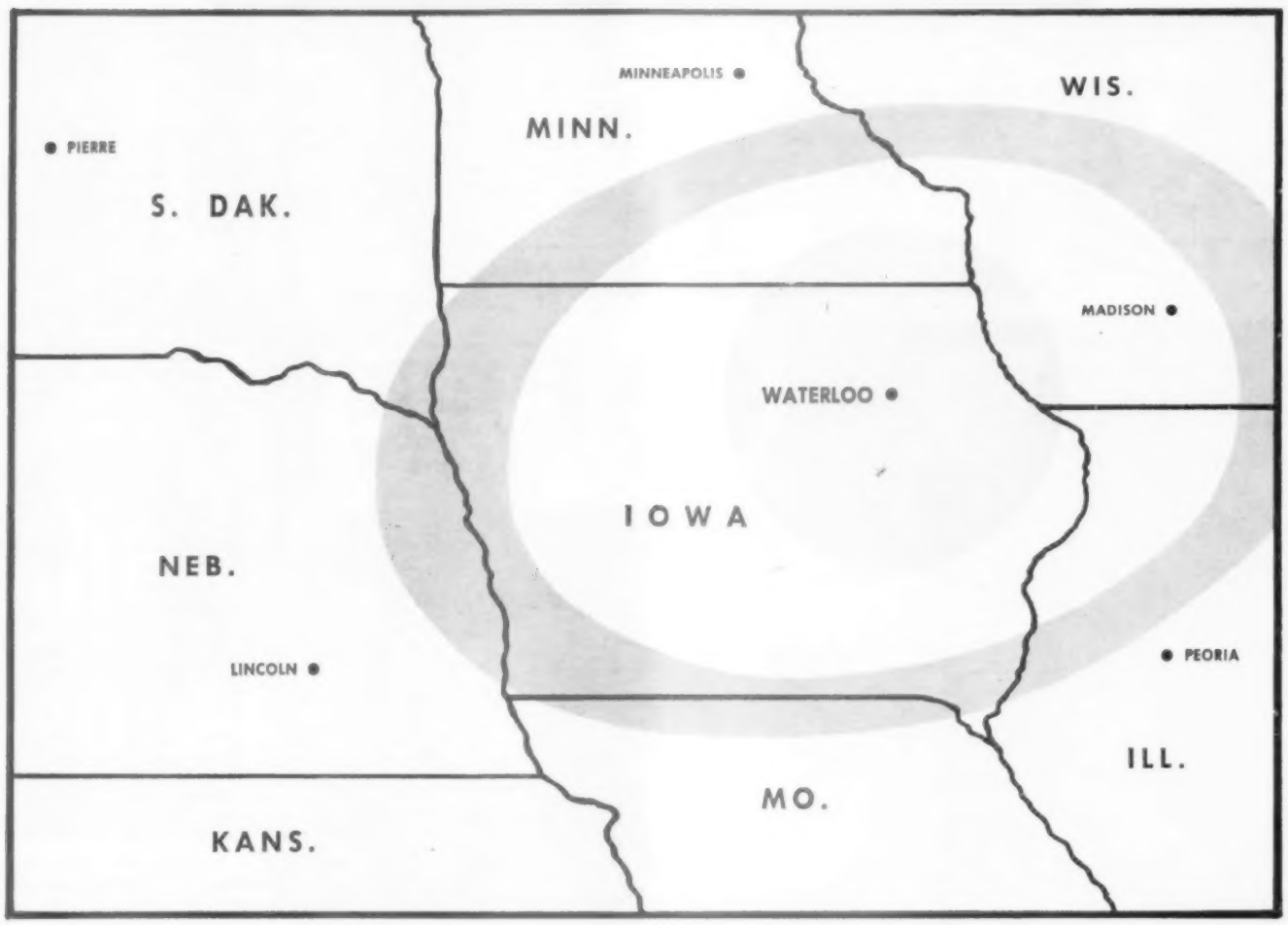

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BOX 179, WATERLOO, IOWA

Research on Feed Additives, Hormones Reported by University of Illinois

URBANA, ILL.—Several research studies concerning feed additives and hormones, plus a number of other feeding experiments at the University of Illinois, were reported at the Illinois Cattle Feeders Day.

One of the experiments indicated that Synovex implants were at least as good as stilbestrol implants for steer calves, and that both implants produced highly significant gains in steers over those of similar steers with no implants, according to Dr. George E. Mitchell, Jr., department of animal science.

Dr. Mitchell reported that daily gains of the steers on test for 322 days averaged 2.18 lb. a day with Synovex implants, 2.13 lb. a day with stilbestrol implants and 1.9 lb. a day with no implants. The researcher said these results agree completely with previous work at the University of Illinois with both implants. No difference was found in live slaughter grade. (Synovex is a combination of the natural hormones estradiol and progesterone.)

Additives

In another test reported at the feeders day steers were fed Tapazole, Dynafac and hyroxyzine as additives to a simple corn, soybean oil meal and hay ration.

An apparent gain response to Tapazole in this experiment was not significant, according to Dr. A. L. Neumann, department of animal science. A substantial early advantage for the Tapazole-fed steers at 28 and 42 days was almost all lost by the last weigh day. Neither Dynafac nor hydroxyzine affected gains or feed conversion in this feeding trial.

Dr. Neumann said that more work with larger numbers of cattle is needed to get conclusive results on these feed additives.

He pointed out that Tapazole is a synthetic additive that reportedly reduces activity of the thyroid gland in animals and should therefore promote fattening in mature animals. Dynafac was described as a "chemobiotic," and hydroxyzine as a synthetic tranquilizer. No difference was noted between hormone-implanted and non-implanted steers with respect to response to the additives tested.

Dr. Neumann explained that in the early stages of testing most new additives, some conflicting results are reported, and that the purpose of this experiment at Illinois was to test all three of these materials under feedlot conditions with a simple ration.

So far, Tapazole has not been approved by the Food & Drug Administration for use as a cattle feed additive because not enough data are available about its possible retention in carcass tissue.

The effectiveness of sulfaquinoxaline and a combination of penicillin and streptomycin in preventing shipping fever was reported by Dr. Mitchell, Dr. Neumann and A. B. Hoerlein. The researchers pointed out that penicillin and streptomycin are in common use as shipping fever treatments, and that sulfaquinoxaline was chosen for the test because of its suitability for adding to water, reports of its use on several farms, and the effectiveness of other sulfas in treating shipping fever.

It was reported that neither of the treatments affected the incidence of clinical cases of shipping fever. None of the differences in rate of gain were statistically significant. However, the apparent effect of sulfaquinoxaline on gains would seem to justify further investigation, the scientists said. Sulfaquinoxaline-treated calves consumed 2.2 lb. more silage per head daily than calves which did not receive sulfaquinoxaline. No clinical cases of shipping fever occurred in the calves on pasture. The penicillin-streptomycin injections did not affect the gains of these calves.

"All-in-One" Silage

Dr. Neumann presented the results of another test in which calves fattened satisfactorily on "all-in-one" silage rations.

Fresh-cut alfalfa and shelled corn were combined at ensiling time to make these rations. The mixture provided a full feed of corn and enough protein to meet the needs of fattening calves when combined in the proportion of about 40% dry corn and 60% green alfalfa.

Neither oat nor corn "all-in-one" silage rations were as good as alfalfa in these experiments unless both were supplemented with protein and unless the oat silage ration contained additional phosphorus, Dr. Neumann explained, adding that calves apparently adjust quickly to "all-in-one" silages. The calves in the test were started on full feed immediately after being brought into drylot.

Average daily gains during the 224-day test were 2.2 and 2.1 lb. for two lots of calves on the alfalfa silage, Dr. Neumann reported. These results compare with 1.5 and 1.8 lb. for two lots on oat silage, and 1.65 and 2.06 lb. for two lots on corn silage.

Recovery from Shipping

Other University of Illinois work reported showed that feeder calves recover better from shipping stress on pasture than in drylot. A group of steer calves shipped from Texas to Illinois was divided into two groups; one group was put on typical legume-grass stubble at the rate of two head an acre for 63 days, while the group in drylot was full-fed legume-grass

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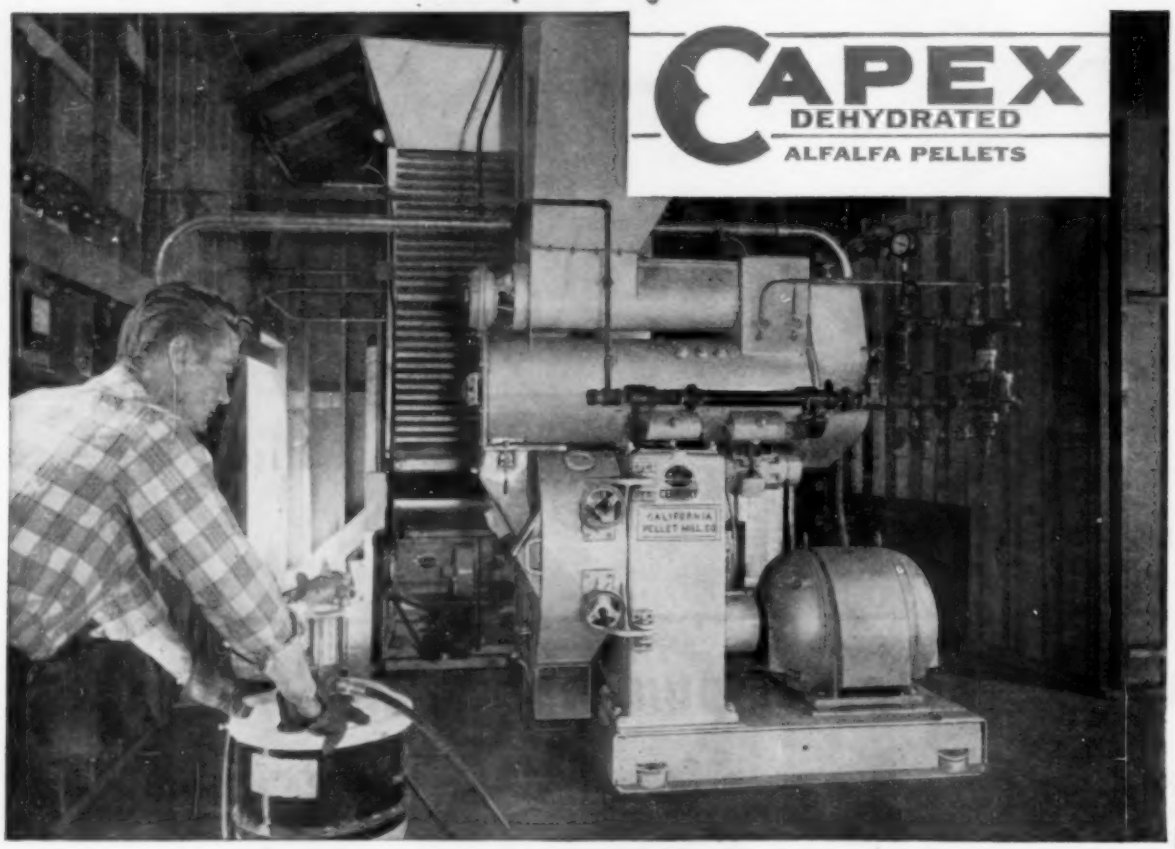

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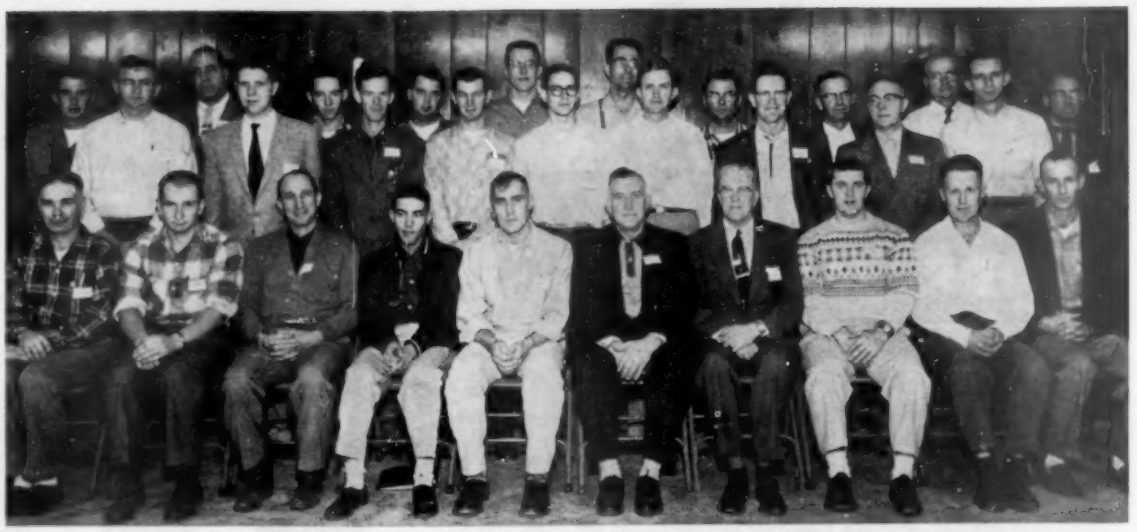

HUBBARD FEED SCHOOL—These employees of Hubbard Milling Co., Mankato, Minn., and feed dealers recently attended a two-day feed training school sponsored by the company. They came from Minnesota, Iowa, South Dakota and North Dakota. The meeting was devoted to feeding and management problems.

Shown are (seated, left to right): Clarence Reinhardt, Postville, Iowa; Leonard McCracken, Jr., Northfield, Minn.; Roland Clement, Miller, Iowa; Jan Reed, Glenville, Minn.; Alvin D. Frank, Blue Earth, Minn.; Ed Rowe, Blooming Prairie, Minn.; J. A. Johnson, Brookings, S.D.; Birdeen Johnson, Jr., Appleton, Minn.; Joe Olson, Clear Lake, S.D., and Harvey Smith, Oak Park, Minn. Standing (left to right): Lyman Fox, Odin, Minn.; Harold Schottenbauer, Evan, Minn.; Gene Black, Round Lake, Minn.; Dennis Quittschreiber, Arthur, N.D.; William Kirby, Anamosa, Iowa; Ed Emerson, Hedrick, Iowa; Gene Yost, Spencer, Iowa; John Droll, Everly, Iowa; Harlan Hade, Gowrie, Iowa; Robert E. King, Dayton, Iowa; Millard Hagerman, Brewster, Minn.; Theodore Groen, George, Iowa; Maynard Gjerde, Elmore, Minn.; George Steen, Allendorf, Iowa; Lowell Dewitt, Gowrie, Iowa; L. R. Jorgenson, Bricelyn, Minn.; Hassal McMahan, Barnes City, Iowa; Bill Sullivan, Albia, Iowa, and L. H. Nelson, Birmingham, Iowa.

silage and hay for the same period.

The pasture calves performed exceptionally well and recovered from shipment without incident, it was reported. The drylot calves recovered well for the first 15 days, but on the 18-20th day 20 cases of shipping fever occurred that were serious enough to require treatment. During the entire test a few persistent cases of footrot occurred in the drylot calves.

However, the performance of the drylot calves was considered to be good despite the outbreak of shipping fever. Fall weather was exceptionally fine, with only a few days of warm rain, accounting at least in part for the good performance of the pasture calves.

About 1,400 lb. of silage and 120 lb. of hay were needed per calf to recover shrink and produce 42 lb. of gain on the drylot steers. Half an acre of stubble pasture for each calf was enough to produce 70 lb. of gain plus shrink recovery.

Bloat Prevention

Dr. Mitchell and Dr. Neumann reported on drinking water additives for preventing pasture bloat in cattle. They explained that certain by-products of the soybean processing industry have shown promise in preventing bloat when administered in a small amount of dry feed, but for cattle that would not otherwise receive supplemental feed, the method of treatment involves a considerable amount of labor, and equal distribution of the small amounts of feed becomes a problem.

The objectives of the experiment reported were to test crude soybean oil, crude soybean oil concentrate and crude lecithin to determine their suitability for addition to drinking water, their effectiveness in controlling pasture bloat and their influence on rate of gain. The four treatments were control; .67% crude soybean oil in the drinking water; .67% crude soybean oil concentrate in the drinking water, and .1% crude lecithin in the drinking water.

During the first five days, little bloat occurred while the steers grazed all the grass and weeds out of the fence rows. During the remaining 30 days, some degree of bloat was observed in every group at every observation period except for the crude soybean oil group on one afternoon.

The severity of bloat was significantly less in animals on the crude soybean oil treatment than in the control group. Rate of gain was also fastest in this lot. The lecithin did not reduce bloat, and gains of the lecithin-treated steers were slower than gains of the other groups.

The scientists concluded the report by saying that of the three additives tested, only crude soybean oil appeared to show promise as a drinking water additive for controlling bloat, and further work is needed before the extent of its usefulness can be determined.

The feeders day audience also was told the results of a test to study the effect of Trolene on grub count and live-weight gain of steer calves.

The test involved feeding 69 Texas calves for 168 days; 35 of them (five from each lot) were treated with 15-gm. boluses of Trolene on Nov. 26. Individual grub counts were taken on Nov. 26, Dec. 24 and Jan. 21. Individual weights were taken at 28-day intervals.

Also involved in the test were 48 Colorado calves which were fed corn silage and soybean oil meal for 140 days beginning Dec. 10. Boluses containing 15 gm. of Trolene were administered to 24 of these calves at the beginning of the experiment. Grub counts and individual weights were taken at 28-day intervals.

Results revealed that Trolene administration did not affect weight gain in either group of calves. Grub infestation was quite high in the Texas calves at the time of treatment. Grub counts in December and January were lower than the initial count in both control and treated calves. Counts taken after treatment were significantly lower in treated calves than in controls. No grubs were detected in the Colorado calves. No evidence of toxicity was observed. The experiment was reported by Dr. Mitchell, Dr. Neumann and W. W. Albert.

Dr. Neumann, Dr. Mitchell, Mr. Albert and D. L. Taggart reported another experiment which compared soybean oil meals containing 44% and 50% protein for supplementing a corn silage ration fed to wintering beef calves.

Three lots consisting of 16 choice Colorado Hereford steer calves each were given a full-feed of corn silage plus either regular or 50% protein soybean oil meal for 98 days. Each lot of steers received the same amount of silage, the lot eating the least controlling the level that was fed.

A complete mineral mix of equal parts salt, ground limestone and dicalcium phosphate was fed free choice. Variation in type and amount of soybean oil meal was the only treatment difference. The amounts and types fed daily per lot of 16 steers each were: lot 1—21 lb. of 50% protein soybean oil meal (supplemental protein equal to that of lot 3); lot 2—24 lb. of 50% protein soybean oil meal (pounds of supplement equal to that of lot 3), and lot 3—24 lb. of 44% protein soybean oil meal.

Two-day weights were taken at the beginning and end of the test, other weights being taken at 28-day intervals. The silage and supplement were fed once daily.

In this test performance of all calves was very satisfactory, the average gain being 1.8 lb. daily, the researchers reported. The fact that the gains and feed required per 100 lb. of gain were equal in lots 1 and 3 indicated that the 1.31 lb. of 50% soybean oil meal fed per calf daily was equal to 1.5 lb. of the regular 44% protein meal. The slightly better gain (non-significant) of the lot 2 calves could be the effect of the small amount of extra protein fed (compare with lot 1) or of the higher energy content of the 50% meal (compare with lot 3).

The scientists noted that when the

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protein supplied by the supplement is held at a constant price, costs of gains are almost identical in lots 1 and 3. When actual differences in price of the two meals ($8 a ton) are considered, costs of gain are reduced in lots 1 and 2 by 6¢ cwt., indicating that if the high protein meals are fed, approximately 15% less meal will be required, the researchers noted.

Oilseed Meals Compared

A comparison of soybean meal, linseed meal and cottonseed meal when fed alone or in combinations to fattening steers was discussed by R. J. Webb, G. F. Cmarik and Dr. Neumann. In this experiment rations were compounded in such a way that they contained equal amounts of calculated total digestible nutrients and crude protein. Because the three supplements in the test varied in protein content, substitutions were not made on a pound-for-pound basis but, rather, on a unit-of-protein basis. The complete mixed rations contained largely ground ear corn and ground mixed hay, plus the various solvent-processed protein supplements. The molasses feed consisted of 70% dried blackstrap molasses and 30% corn oil meal. Minerals and salt were fed ad libitum, as was the complete ration.

The scientists reported that no one single protein supplement or combination of supplements proved to be clearly superior in the 125-day test.

The steers receiving the mixture of three supplements, without molasses, made the largest gains (non-significant over gains of the other lots), but the steers receiving the single supplements made their gains on less feed. Adding molasses in the supplement did not improve feed intake, rate of gain, or sale price. In fact, the costliest gains were made by the steers in the lot that received molasses.

Average daily gain for all steers was 3.06 lb., which the researchers referred to as a very satisfactory gain considering the fact that the ration was over one third roughage, including low-quality cob contained in the ground ear corn.

Cattle Market

Another feeders day speaker, Prof. Larry H. Simerl, University of Illinois department of agricultural economics, predicted that cattle feeders will continue to make profits from their feeding operations in the next few years.

Prof. Simerl said that strong demands for feeder cattle and calves this fall kept prices up, and that herd owners in the range states especially are holding cattle to build up their herds.

"When this holding tendency lessens, prices of feeders will drop. When this drop comes, in the next 2-4 years, prices of feeder cattle and calves will go down more than prices of fed cattle. Then more of the profit will swing back to the feedlot from the breeding herd," Prof. Simerl related.

"Much of the apparent profit from feeding cattle in the past two or three years has been paper profit. It could not be spent because it has to be used to buy replacement cattle. Much of any downward adjustment in prices of fat cattle over the next few years will be offset by lower costs for replacement cattle."

The economist pointed out that beef feeding is becoming mechanized and that mechanization inevitably leads to larger operations. It appears that many farmers will plan to double the size of their present feeding operations within the next five years. "Since changes are necessary and inevitable, the farmer who wishes to profit from feeding cattle in the future must make his plans now," he said.

How much PROTEIN do they need?

Rations for ruminants require from 12 to 13 per cent protein for good meat, milk, calf and lamb production — according to leading livestock nutritionists.

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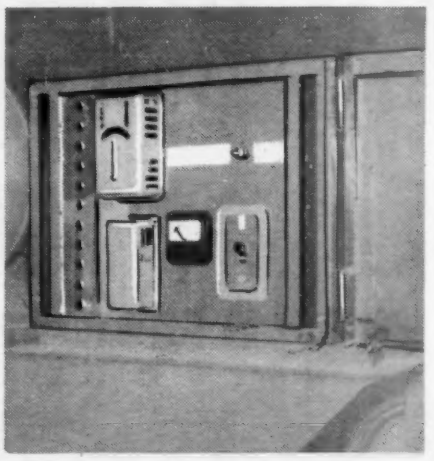

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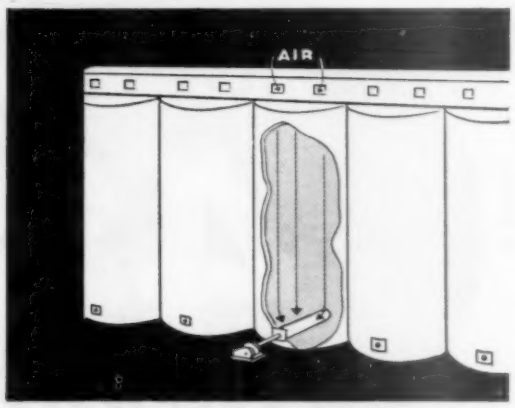

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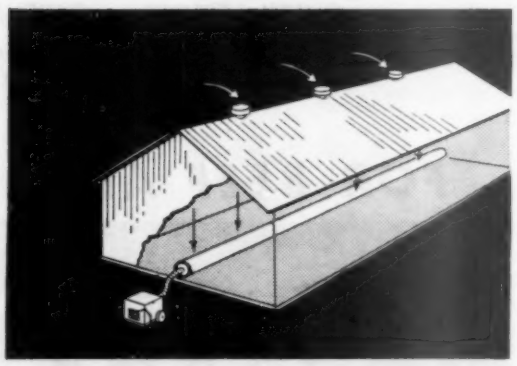

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Purina Announces Mill Management Changes At Branch Plants

ST. LOUIS—David L. Grant, manufacturing vice president of the Ralston Purina Co., has announced the transfers of mill managers at Purina branch plants at Louisville, Ky.; Muskogee, Okla., and Wilson, N.C.

F. W. Kessler, who is now manager at Louisville, transfers to Wilson, to succeed L. W. Ledbetter, Jr., who is being transferred to the company's general buying department in St. Louis. H. S. Farmer, now manager at Muskogee, becomes manager at Louisville. D. R. Mauery, now credit manager at the company's Shreveport, La., plant, transfers to Muskogee as manager.

Mr. Kessler started with Purina as an office trainee at Nashville in 1953. He had also served at the company's plants in Wilson, N.C., and Circleville, Ohio, before becoming manager at Louisville in 1957. Mr. Ledbetter started with the company as engineering trainee at Ft. Worth in 1947. He served as assistant buyer and buyer at Ft. Worth before becoming manager of the Amarillo, Texas, plant in 1952. In 1954, he became manager of the Wilson plant.

Mr. Farmer started with Purina in 1949 as a clerk at Nashville. In 1953, he was transferred to the company's plant at Macon, Ga., as stock department manager. He became manager at Muskogee in 1956.

Mr. Mauery started with the company in 1951 as an office trainee at Nashville. In 1953 he was transferred to Shreveport as order credit manager.

N. J. Poultry "Seal" Rules Announced

TRENTON, N.J.—Rules and regulations governing the use of the New Jersey Department of Agriculture's "State Seal of Quality" on eviscerated, ready-to-cook poultry meat have been issued by the state board of agriculture. This is the same seal now being used to identify high-quality New Jersey eggs.

The board has ruled that, to qualify for the seal, birds must have been produced in New Jersey and processed in a licensed slaughterhouse. Before the seal is affixed, the birds must have been inspected for wholesomeness and graded for quality under the joint supervision of the departments of health and agriculture. Official standards, which guarantee top quality to the consumer buying state-seal, ready-to-cook poultry, have also been promulgated by the board.

According to J. C. Lambert, chief, bureau of poultry service, department of agriculture, the first state-seal roasting chickens will probably appear on the market early in 1959.

The New Jersey Poultry Meat Growers Cooperative Assn., Inc., organized last spring, has been conducting a pilot poultry dressing operation for the past two months. Its members expect to be ready to market custom-dressed, eviscerated poultry under the state seal shortly after the first of the year. The association is composed of 22 growers who produce more than 30 million pounds of poultry meat annually.

The new board regulations specify that licenses to use the seal will be issued to qualified poultry meat producers or processors by the state department of agriculture. Slaughterhouse licenses are issued by the state department of health.

Advertising and promotion of the new "State Seal of Quality" poultry will be directed by the New Jersey Poultry Products Promotion Council. The council's activities are supported by a tax on poultry feeds paid by all New Jersey poultry farmers.

OPENS FEED STORE

SMITH RIVER, CAL.—Aiso Braido has opened the Smith River Feed Store to retail animal and poultry feeds.

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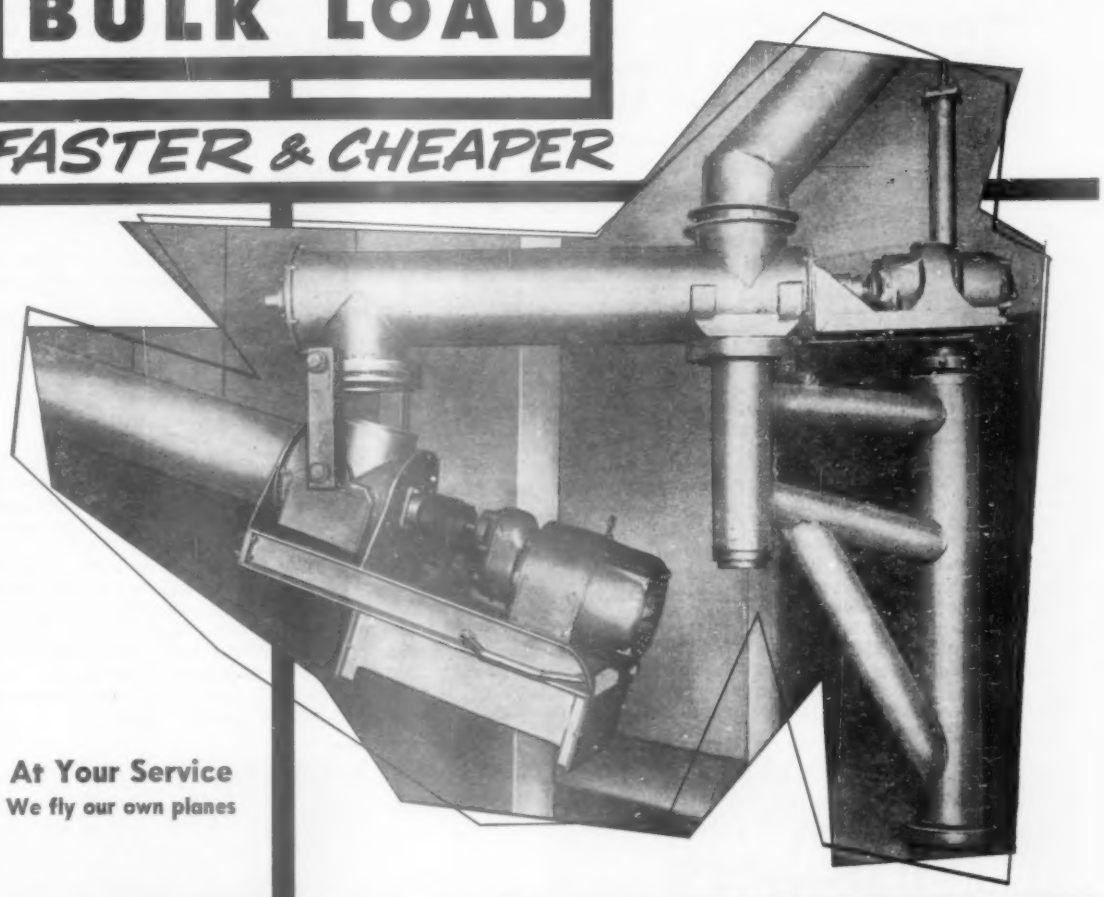

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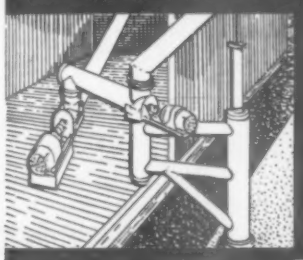

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PROMOTION-BUILT BUSINESS—Daily & Son Feeds, Fremont, Neb., has an egg program and active promotion plans for helping farmers of the trade area specialize in a livestock or poultry program. The result has been good business increases. Delivery trucks are loading in the picture above for deliveries in the trade area. The firm has a payroll of six persons.

Egg Program, Poultry Promotion Boost Nebraska Dealer's Sales

"The only way small farmers can stay on the farm is to increase income per acre. Our plan is to get them interested in a livestock or poultry specialization"

By Jess F. Blair
Feedstuffs Special Writer

An egg marketing program combined with poultry promotion and good merchandising have made Daily & Son Feeds, Fremont, Neb., one of the fastest growing feed firms in the eastern part of the state.

In just a few years' time, Bill Daily and his partner, Gayle Eggers have pushed feed sales to more than 250 tons a month.

"Our business has been built by service and promotion," said energetic, young (27), Mr. Daily. "We had a potential here and we decided to go out and develop it. To do that, it meant that I had to spend most of my time in the field while Gayle keeps things running at the store."

About two thirds of the firm's sales are poultry feeds, baby chicks and poultry supplies. The two partners are furnishing feed for 50,000 to 60,000 laying hens, and are handling the eggs.

"We got a large egg company to buy the eggs," said Mr. Daily, "and they are picked up here at the store. The producers clean and grade the eggs and then bring them here to our two large 600-case coolers. We furnish a man to help them unload, and this same fellow helps load the cases onto the company truck."

The firm handles a complete poultry feed, but for many of the diversified farmers with smaller flocks, a concentrate is mixed with the home-grown grain.

Complete Feed Trend

"The larger producers are getting away from this plan," he said. "They say it's too time-consuming, and they buy a complete feed. The time they save can be diverted into caring for more hens, which seems to be more profitable."

The average flock size is from 1,000 to 1,500. However, the customers keep all the way from 400 up to 8,000 hens. The trend is toward larger flocks, better houses and more modern equipment.

To profit from this development, the two partners have stocked a complete supply of poultry equipment. They also have a good volume of sanitation supplies and antibiotics. They sell around $1,000 worth of medication and veterinarian supplies per month.

To get this kind of business, the dealer must do certain things and have the proper facilities to handle it, they said. While the firm is not large in buildings and equipment, it has increased storage by installing three steel bins. Grain or feed can be augered from them into the mixers and grinders and then into the weigh-buggy or into the truck.

Deliveries

The two partners make deliveries to a large percentage of customers, though some of the smaller ones come after their feed. There are two delivery trucks. The bulk truck is equipped with an auger for unloading, and is used by all the larger customers.

In addition, there is a seven-ton truck for sacked feed and other supplies. In loading it, the truck is backed up to a ramp exactly the same height as the bottom of the truck bed.

"This is one case where the business outgrew the facilities," said Mr. Daily, indicating the rather small building. "However, we are catching up. We are now merging our poultry operations with a local hatchery, and this will enable us to hatch our own chicks and expand the territory. We will also gain more storage and have a downtown office for the poultry department."

Customer Service

The main ingredient in the firm's success appears to be customer service. The store is a gathering place for dozens of farmers who come to discuss management problems, and they always get a warm reception.

"Customer service is one way to keep down competition," said Mr. Daily. "Give them a lot of help and they don't shop around too much."

While customer service is a much-abused term, it can mean more than just answering questions or giving advice. In the case of Mr. Daily, it means going out to the farm and helping the producer regularly. Mr. Daily and another service man spend most of their time visiting farmers and trying to work out management problems. They help cull hens, do post-mortems, plan poultry houses, help re-arrange equipment to save labor and also try out new insecticides on tests.

"This type of service means lots of work," he explained, "and it can get the dealer bogged down in details. We try to teach the producer to cull and do the other regular tasks. We don't like to move equipment, clean eggs or anything the farmer can do just as well. Our time is limited on each farm, so we must be tactful on these matters. It's to the dealer's advantage if he can train the new producer in better management methods. It means more profit to them both."

Feeder Meetings

Some egg producers came into the organization after seeing their neighbors making money at it, but they were hand-picked by the firm and persuaded to keep hens to supplement the farm income. Several customer

ENERGETIC MANAGEMENT — Gayle Eggers, left, and Bill Daily are partners in Daily & Son Feeds, Fremont, Neb. Both are young and energetic. Mr. Eggers, 31, is office and store manager. Mr. Daily, 27, is the promotional man for the firm.

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B&L DELIVERED IT
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WITH EQUAL EASE
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Cedar Rapids, Iowa

meetings were held. In holding a meeting, Mr. Daily believes in making it a "finished production."

One was held downtown where a certain number of farmers were invited to partake of a free meal and hear several poultry experts explain how to raise eggs profitably. Mr. Daily had two poultry specialists from the agricultural colleges, an egg marketing agent from a large company and an experienced service man. After short talks were given, the speakers and the Daily & Son owners took part in a panel discussion.

"A meeting of this kind must be carefully planned," said Mr. Eggers. "Always select your own farmers. You want leaders who know how to manage and will make a success at it. We also try to pick those who can do at least a good part of their own financing. A man who must be financed 100% seldom makes a good customer."

Credit

In any business such as this the dealer will have a credit problem, says Mr. Daily. This is especially true with new producers who must borrow money for housing, equipment, birds and feed. The firm has not put out much credit except on feed, though with some customers, credit for birds and equipment has been extended.

"We try to help the producer get financing through banks, loan associations and the FHA," he said. "A dealer is taking a costly risk to put out too much credit any time."

Much of the promotional work of the firm has been with poultry, but other lines have not been neglected. The company also services several dairies and numerous small feeders, and these customers also receive management help. They are all located on delivery routes which reach out from Fremont.

"It's rather difficult to stress everything," Mr. Daily said. "However, after you get one project going well, others can be started, and that is what we are doing with hogs and dairy cows now. The only way for small farmers to stay on the farm is to increase their income per acre. Livestock and poultry are answering that problem for a few farmers. Our plan is to get other farmers interested in some type of livestock or poultry specialization."

PAYS EXTRA DIVIDEND

NORTH CHICAGO, ILL.—An extra dividend of 10¢ a share on common stock, in addition to the regular quarterly dividend of 45¢ a share has been declared by Abbott Laboratories, North Chicago. The directors announced both will be paid Jan. 2, 1959, to shareholders of record Dec. 10, 1958. On preferred stock, the regular quarterly dividend of $1 a share will also be paid Jan. 2, 1959, to shareholders of record Dec. 10, 1958.

Output of Iowa Layer Flocks Compared to Large Swine Farms

AMES, IOWA—Large Iowa poultry flocks are producing tonnages in eggs comparable to the amount of pork grown by fairly large hog producers, according to Prof. W. R. Whitfield, extension poultryman at Iowa State College.

Eight of the largest flock owners in the state produced an average of 123.3 cases of eggs during the month of October, according to the Iowa Poultry Demonstration Flock Report. This is the weight equivalent of 24 hogs weighing 230 lb. each. The eight poultry flocks averaged 2,700 hens each.

On a 12-months' basis, this would be 66,000 lb. of eggs per farm, or the total weight of 280 hogs. The October records are conservative, said Prof. Whitfield, since that month's production was only 16.4 eggs per hen. This monthly average would total 200 eggs per hen for an entire year. Iowa's actual average is 212 eggs per hen per year.

Another phase of the report showed that these producers had monthly incomes averaging $1,143, and monthly expenses of $755. The total expenses would have been nearly double if other expenses such as replacement pullets and depreciation costs had been added, said Prof. Whitfield.

Demonstration flock reports for the past 10 months showed that the 1,000-hen demonstration flock owners who started on the record program Jan. 1 are behind in egg production rate compared with the experienced owners who have kept flock records for several years. Large flock owners are cutting the labor required per hen nearly in half compared with smaller producers, said Prof. Whitfield. The large-flock owners are averaging about 35 min. of work per hen per year, and the small-flock owners are averaging 60 min.

Boston Grain Exchange Sets Annual Banquet

BOSTON—A turnout of some 400 persons is expected to attend the Boston Grain & Flour Exchange annual banquet to be held Feb. 5 at the Hotel Sheraton-Plaza.

Better known as "The Boston Tea Party" in the grain trade, the banquet has had a growing attendance over the years. Visitors from important grain trading centers in the U.S. and Canada will also attend.

FEED BROKER DIES

MEMPHIS — Services were held here recently for Frank R. Beene, Memphis, longtime commodity and stock brokerage company executive, who died Nov. 26. Most of Mr. Beene's career in the brokerage business was with W. E. Richmond & Co., which went out of business in 1956. He had been a partner in the firm for 20 years.

How Du Pont helps you sell feeds containing TWO-SIXTY-TWO®

FEED COMPOUND

DU PONT advertisements like the one on the right are telling dairymen that the top purebred herds in the country are fed rations containing "Two-Sixty-Two."

This Du Pont ad is appearing in "Hoard's Dairyman" and other leading farm publications. It features the Mapoval Farm Holstein herd, one of the largest and most outstanding purebred herds in the country, a herd that is fed a dairy ration containing "Two-Sixty-Two."

Leading herds of the other dairy breeds will be featured in a continuing series of advertisements to dairymen. All of them will back up your sales effort by telling dairymen about the success achieved in feeding rations that include "Two-Sixty-Two."

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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

• Irvin Macafee and his three sons, who operate Mapoval Farms, Inc. Together they farm 750 acres lying between Milan and Athens along Route 220 in Bradford County, Pa. Right: A portion of the Mapoval Farms Holstein herd that recently produced 14,212 lbs. of milk and 535 lbs. of fat. Owned by the Macafee family, this farm uses good breeding, careful management, good pastures like that shown here, and dairy rations which include Du Pont "Two-Sixty-Two" feed compound to produce an excellent record of success.

How the Macafees make an average of

14,212 lbs. milk . . . 535 lbs. fat from their Mapoval Farms Holstein Herd

Mapoval Farms, Inc., in Milan, Bradford County, Pennsylvania, is a successful 750-acre farm operated entirely by the Macafee family. Irvin Macafee, who won the Pennsylvania Master Farmer Award in 1950, bought the first part of this property in 1920 and has worked steadily at herd improvement ever since. He is assisted by his wife and three sons: Ted, holder of an American Farmer degree, Robert, and John.

The Mapoval herd numbers 130 purebred Holsteins, of which 60 are in milk. The most recently completed herd average of 14,212 lbs. of milk and 535 lbs. of fat on a 305 day, 2x basis helped the Macafees qualify for their sixth Holstein-Friesian Progressive Breeder Award—the highest recognition possible from the Holstein-Friesian Association of America for outstanding herd performance—both in type and production.

The successful feeding program of Mapoval Farms consists primarily of home-grown grains, which are ground and mixed in bulk locally. The Macafees use a 30% concentrate which includes Du Pont "Two-Sixty-Two" feed compound, a top-quality urea source of protein, to bring the ration up to 12-14% protein content.

In dairy feeds, "Two-Sixty-Two" not only provides an efficient source of protein, but also helps unlock nutritive values in stimulating rumen bacteria which break down feed fibers in roughage. Just as the Macafees have done, you, too, can profitably use "Two-Sixty-Two" in your dairy supplement. Ask your feed dealer about it today, or write Du Pont.

• Typical of the producers that comprise the Mapoval Holstein Herd is Mapoval Rebel Walker (Very Good) with a three-year-old record of 16,297 lbs. milk and 594 lbs. of fat. She is a daughter of Marshline Pabst Dean Walker (Very Good), their former herd sire, which was recently sold to the American Breeders' Service.

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"Heavy Pill" Therapy For Cobalt Deficiency In Sheep Announced

CHICAGO — A new "weapon" for fighting cobalt deficiency in sheep has been announced by Nicholas of America, Ltd., American subsidiary of a British-American drug firm.

The "weapon" is a low pressure cobalt bullet ejector gun which deposits a cobalt bullet down the sheep's throat. It is then swallowed and lodged in the forestomach or paunch where it remains for a year or more and releases a full dose of cobalt daily.

Cobalt is essential in the formation of vitamin B_{12}, which, in turn, promotes weight gains and wool production. The problem, company officials said, has been to find a sure way to provide an adequate, continuous supply of the trace mineral without regular dosing. The new bullet, called "Permaco," fills these requirements, the drug firm announced.

This method of administration is known as "heavy pill" therapy. The company announced that X-ray studies show that the bullets practically always lodge in the sheep's reticulum. No harm is caused, and controlled field tests indicate that at least 95% of treated animals retain the bullet, which is in the form of a cylinder about ½ in. in diameter and ½ in. thick.

The announcement said that trials carried out in Australia, New Zealand, England and Ireland on cobalt-deficient sheep have proven positively that animals treated with cobalt bullets make better weight gains than untreated sheep. An average of 12.8 lb. greater gain per animal was reported at the end of one specific trial, which, the announcement said, is an average response. The wool of the treated sheep was also reported to have shown marked improvement.

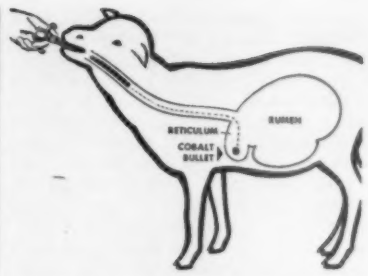
Exists in U.S.

"Acute cobalt deficiency in sheep (also referred to as 'salt lick,' 'burton ail,' 'wasting disease,' 'Grand Traverse Disease,' and other local names) has been officially recorded in many sheep-growing areas of the U.S. and Canada," the announcement said. "In addition, field reports indicate that many other areas also lack or cannot provide sufficient cobalt for maximum production even though symptoms have not been apparent. This is particularly true of grazing lands that are predominantly grasses or grains."

The company recommends that the bullets be given lambs from eight weeks of age. Ewes and rams can be dosed when convenient. Dosing the ewe prior to lambing will also insure maximum vitamin B_{12} protection for the suckling lamb, according to the announcement. Cost of the treatment is estimated at about 42¢ per lamb.

U.S. distributor of the product is Wm. Cooper & Nephews, Inc., Chicago. Nicholas of America, Ltd., also has an office in Chicago. The firm is a subsidiary of Nicholas International, which is controlled by Nicholas Pty., Ltd., Melbourne, Australia, and Aspro-Nicholas, Ltd., London. The Melbourne and London firms, linked through joint ownership of much of the stock, have offices and plants in more than 100 countries. In addition to drugs, they manufacture and market veterinary and patent medicines. Lindsay Cuming, president of Nicholas International and Nicholas of America, said the firm plans a U.S. operation for the marketing of a variety of ethical, veterinary and patent medicines.

"It could be that the bulk of our sales will be made in the veterinary field for some time to come," Mr. Cuming said. "But we have more than 150 products for which we hope to find a market."



COBALT GUN—A low-pressure ejector gun designed for use with a cobalt pellet is illustrated here. It deposits the bullet in the esophagus. The animal then swallows the bullet, and it lodges in the paunch. Its weight keeps it in the paunch, where it provides a continuous supply of the essential trace mineral for a year or more, according to an announcement by Nicholas of America, Ltd., Chicago, manufacturer.

Director of Montana Flour Mills Resigns

GREAT FALLS, MONT. — Directors of the Montana Flour Mills Co. at a regular meeting accepted with regret the resignation of Albert F. Strobehn, a director, and elected W. H. Bertsche, Jr., to succeed him.

Mr. Strobehn entered the employ of the Montana Elevator Co. at Moore, Mont., in 1908. He served in varying capacities until 1925 when he was made treasurer and assistant manager of the company. In 1931 he was elected a director of the Montana Elevator Co. and in 1933, when the firm was merged with the Montana Flour Mills Co., he was elected a director of Montana Flour Mills Co. In 1940 he was made vice president and assistant manager of the company and by 1947, when ill health forced him to forego any strenuous activity, he was executive vice president. Since 1947 he has been active only as a director.

Mr. Bertsche is a director of the Great Falls National Bank, a director of Gamers Sally Ann Bakery, and until recently was the owner-operator of Bertsche's Sally Ann Bakery.

Other action taken at the meeting included the declaration of a dividend in the amount of 20¢ a share, payable Dec. 10 to shareholders of record Dec. 1, 1958.

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IMPROVED NATURAL PALATABILITY,
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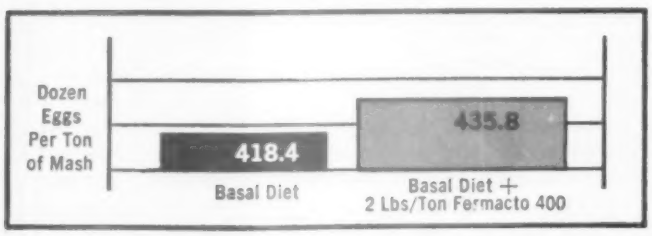
BY THE ONLY STANDARD THAT COUNTS... PROFITABLE EGG PRODUCTION... LAYING MASHES PERFORM BETTER WITH...

Borden's fermacto 400

A unique blend of multiple fermentation factors...only two pounds per ton, on an all-mash basis, provide complete unidentified growth factor fortification... at a cost of only about *twenty-five cents.*

Tests have shown that Fermacto 400, when added to egg mashes already considered complete, can help produce as many as seventeen dozen *extra* eggs per ton of feed. Here is practical proof of performance:

48-week test on Single-comb White Leghorns in laying house



OVER 17 DOZEN EXTRA PER TON OF MASH

Results of a number of practical feeding trials are available for review. Write Borden's, or ask your Borden field representative for these test data... to see just what Fermacto 400 can mean to *your* program.

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FEED SUPPLEMENTS DEPARTMENT
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Laboratories and test farms at Elgin, Illinois.

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...for more efficient, more economical egg production...without wasteful over-fortification...and, at a cost of only about $1.10 per ton.

All necessary vitamins and minerals have been blended with Fermacto 400 in one convenient, complete supplement for laying mashes. Write for details.

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Diethylstilbestrol
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We are fully equipped with modern facilities for the tests of the new feed additives as well as protein, fat, fiber, etc. We check your feed potency regularly at low cost. Vitamin assays are a specialty with us.

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Forum for Industries Serving Agriculture To Be Held in Illinois

URBANA, ILL.—A conference for businesses and industries serving agriculture will be held at the University of Illinois campus here Jan. 27-28.

Called Agricultural Industries Forum, the program will follow the theme, "Tomorrow's Farm Challenge to Food and Agricultural Service Industries." The conference will be divided between general sessions considering the over-all economic picture for food and agricultural industry and separate group sessions for those interested in grain, livestock, dairy, poultry, farm supplies and equipment and food processing and distribution.

Several nationally-known speakers are scheduled to appear on the program, the first of its kind to be held at Illinois.

Emphasis of the conference will be placed on new techniques, new developments and new markets. An industry advisory committee representing all agricultural industries is assisting in planning the program, selecting speakers and encouraging participation in cooperation with the University of Illinois department of agricultural economics, sponsors of the event.

Among members of the committee are I. E. Harrod, regional manager, Allied Mills, Inc., Decatur, Ill., and Virgil A. Wiese, Illinois Grain Dealers Assn., Champaign.

Cuban Firm Licensed To Manufacture Morea

CRETE NEB. — Feed Service Corp., Crete, manufacturer of Morea liquid feed supplement, has announced the licensing of Destiladora Gancedo, S.A., Havana, Cuba, to manufacture and distribute Morea.

Philip C. Anderson, president of Feed Service Corp., said the arrangement with the Cuban concern was handled by Porter International Co., overseas representative for development of Morea.

The Cuban firm will distribute the liquid premix throughout Cuba, Honduras, Guatemala, Costa Rica, El Salvador, Nicaragua and Panama. The Cuban company is connected with Maderas de Gancedo, which distributes lumber, hardware and supplies to Caribbean farmers.

RETIREMENT—Bruce K. Conover, Jr. (left), executive vice president of Maritime Milling Co. and the Park & Pollard Co., presents a silver platter to Stephen S. Grill at the recent annual sales meeting in Buffalo. Mr. Grill, a Maritime field representative from Reading, Pa., retired after 16 years with the firm.

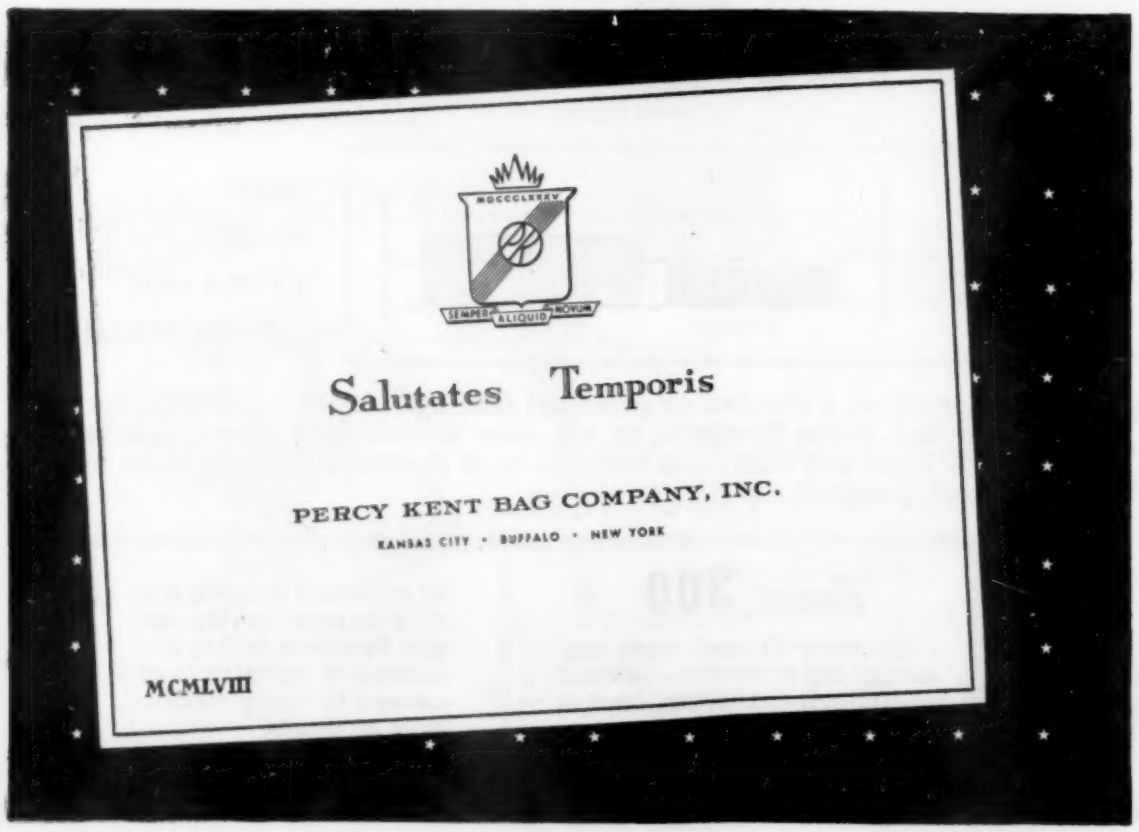
Announce Retirements At Maritime Milling

BUFFALO, N.Y.—The retirement of two salesmen was announced at the recent annual sales meeting of the Maritime Milling Co. and Park & Pollard Co.

Stephen S. Grill, a Maritime sales representative in the Reading, Pa., area was presented a silver platter at a banquet in his honor. He had been with Maritime since 1942. Walter H. Heidtmann, who retired after 41 years with the Park & Pollard Co., Inc., was unable to attend; a silver platter was mailed to his home in Reading. The territory formerly serviced by these two salesmen will be covered by Lloyd G. Zuber, Fleetwood, Pa., and Anthony Schmittinger, Monocacy Station, Pa.

A first-hand look at new improvements at the Maritime Milling plant in Buffalo served to highlight the two-day meeting dealing with latest product, production and service improvements, and attended by 61 salesmen.

In 1956 Maritime acquired the Park & Pollard Co. Both firms continued to sell their own brands of dairy and poultry feed, with all manufacturing consolidated in the Maritime mill. Last year both firms were purchased by the George Urban Milling Co. George Urban, president of both Maritime and Park & Pollard, said mill improvements so far exceed $250,000, and that other improvements are planned in the 13 northeastern states where Maritime and Park & Pollard feeds are sold.



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Tobias Enterprises
326 North Michigan Ave., Chicago 1, Ill.

"You bet we're proud of our farm"

"We like our way of life, too, because it's been a good way and a useful one.

"At least we've tried to make it so.

"When you work with something and watch it grow because of the care you're taking with it, it's almost like you're creating something . . . a wonderful sort of a feeling to have.

"Sure, we've had to work hard. Our family has lived on this land for 46 years now, and it hasn't always been easy. There've been drouth years, floods, insects—sometimes almost enough to make us wonder if it's all worthwhile.

"But it *is* worth it!

"We've stuck to farming, and the land has been good to us.

"Naturally, we are concerned about what our youngsters will do when they grow up. I guess all parents feel that way.

"But I know one thing—we're going to let our children make up their own minds. Whatever they do, we know the training they've gotten here will fit them for any number of jobs. (Can't help but hope, though, that they'll decide to stay with what they know best—farming.) Just look at the opportunity ahead.

"We've read all about how this country's population is booming so much, and how much more it's supposed to grow in just a few years.

"But when a country grows—and a world for that matter—people need more of everything. And the things we produce here on the farm will be the key to a whole lot of that growth.

"Sure, it's going to mean that farmers will have to produce more. And we'll have to be *better* farmers to meet the challenge. But take your 4H Clubs, FFA, and the advanced programs being offered by our ag colleges. Why, our youngsters today are learning things that were almost beyond the imagination when I was a boy.

"Yes, from here the future looks good . . . good enough to make us mighty thankful we're a *farm* family."

* * * * *

We at Cargill agree. There *is* going to be an increasing demand for farm products in the years to come. And the farmer is going to become an increasingly vital person to our economy.

That's a big responsibility this family is facing right now—the responsibility of helping provide all the crops our country and the world are going to require in future years. Just think, a predicted 220 million persons in the United States by 1975—and 3½ billion in the world by 1999!

But we firmly believe tomorrow's farmers are equal to the job, and then some. Cargill has worked with farmers and their families for more than 93 years now. (Our business is Creative Processing—finding ways to change raw farm crops into finished products people will need and buy.) That's why from our position as Number 2 man on the farmer-processor team, we can vouch for the kind of stock from which farm folks are made.

These are rugged, honest, loyal, hard-working and warm-hearted people. They're a big part of our own future at Cargill.

Cargill
CREATIVE PROCESSING

93 Years of Creative Processing of Farm Products

CARGILL

THE MIXER THAT MEETS EVERY MIXING REQUIREMENT... THE Marion MIXER

WITH Exclusive MIXING AND BLENDING ACTION

MIXES DRY MATERIALS:
- Feeds
- Minerals & Vitamins
- Fertilizers, etc.

BLENDS DRY MATERIALS with LIQUID ADDITIVES:
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Absolute accuracy is assured through the exclusive Marion cross blending and mixing action. Even trace materials can be thoroughly and completely blended into your product. A constant uniformity, guaranteed---

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- 60% Fish Meal
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Less Mastitis—Higher Milk Production — More Profits

new approach to Herd Health

Results of tests using BINGMAN'S P-17

During this test period herds were fed BINGMAN'S P-17 at low level.*

BINGMAN'S P-17

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Aids in Control of MASTITIS

Aids in Reduction of SCOURS

Aids in Prevention or Treatment of FOOT ROT

Aids in Reduction of RESPIRATORY INFECTIONS

	FIRST TEST			SECOND TEST (in 60 days*)			
Herds Tested	Quarters Tested	Clear	Infd.	Quarters Tested	Clear	Infd.	Percent Cleared
A.	32	21	11	28	28	0	100%
B.	95	76	19	112	108	4	79%
C.	80	34	46	68	55	13	72%
D.	68	52	16	68	64	4	78%
E.	74	38	36	79	72	7	81%
F.	83	69	14	78	76	2	85%
G.	60	34	26	44	39	5	81%
H.	36	27	9	28	26	2	77%
I.	16	11	5	16	15	1	80%
J.	32	16	16	28	25	3	81%
K.	48	41	7	60	59	1	86%
	624	419	205	609	567	42	79.5%

INDICATION OF SEVERITY OF INFECTION

Degree	1st Test	2nd Test
Slight	94	30
Infected (Mastitis)	66	9
Chronic (Mastitis)	45	3
Total	205	42

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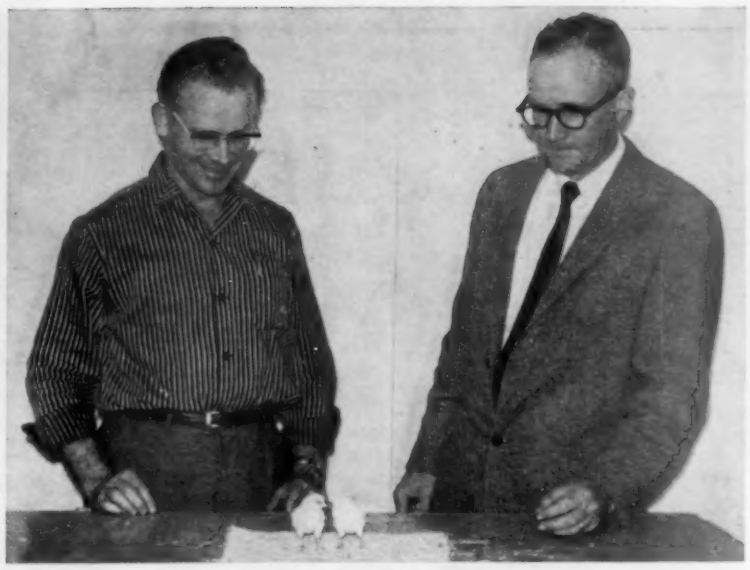


TWO CHICKS FROM ONE EGG—Gail Brown (left) of Jeff D. Brown & Co., Springdale, Ark., and Dr. N. R. Gyles, University of Arkansas geneticist, are shown examining the two perfectly formed pullets that were hatched from one egg on the Jeff D. Brown & Co. farm. The company produces Ledbrest Cornish Cockerels. "We've been in business since 1929," said Mr. Brown, "and I guess in that time we've hatched some 75 million chicks, and this is the first time I've ever seen anything like this."

High-Roughage Pellets Tested on Dairy Calves

Recent experiments at the Ohio Agricultural Experiment Station involved free-choice feeding of high-roughage pellets (¼-in. diameter) made from two parts coarsely-ground alfalfa hay (⅛-in. screen) and one part a simple grain mixture to dairy calves.

The experiments were published in the Journal of Dairy Science, and were reviewed recently in abstract form by H. F. Judkins, secretary-treasurer of the American Dairy Science Assn.

The experiments, conducted by Dr. J. W. Hibbs and Dr. H. R. Conrad, dairy science department, showed that feeding high roughage pellets resulted in earlier dry feed consumption, earlier feeding rumen function and more rapid growth than in previous experiments in which loose hay and grain were fed in the same 2:1 ratio. The high roughage pellets were fed free-choice from the third day to 16 weeks, with milk to the seventh week of age.

Calf performance was enhanced when chlortetracycline was mixed with the pellets. The addition of molasses, distillers solubles, calcium phosphate and brewers yeast to the basal pellets had no combined beneficial effect, the experiments indicated.

Studies on protein level and source indicated that the high-roughage pellets should contain 15% total protein or more, and that growth was not retarded by substituting good timothy hay for one half the alfalfa in the pellets. Digestion studies indicated that cellulose digestibility would be greater if the hay had been ground coarser than that obtained using a ½-in. hammermill screen.

The researchers reported further that no significant difference in calf performance resulted from rumen (cud) inoculations using fresh, warm cud material. However, rumen inoculations did result in the establishment of protozoa and certain rumen bacteria which were absent from the uninoculated calves, and also increased vitro cellulose digestion.

Other advantages observed in feeding high-roughage pellets were: (1) prevention of selective eating, (2) simplification of feeding hay and grain in the desired proportion, (3) reduction in labor in feeding, (4) elimination of waste and (5) ease in adding microingredients. The researchers reported that further work on feeding high-roughage pellets is in progress.

Record Set by Cotton Producers Division

ATLANTA, GA.—The Cotton Producers Assn., Atlanta, announced recently that farm supply purchasing by the cooperative's purchasing division during the past year set an all-time record of $22 million, up 32% over the previous year.

A little more than half of the total was in feeds. More than 127,000 tons of feed were handled for a dollar volume of $11.2 million, according to Dixie Co-op News, publication of the cooperative.

Net margin for the division during the past fiscal year was $1.8 million, compared with $1.1 million the previous year, a jump of 67.7%. This is a return of 35¢ on each $1 of patrons' equity and $1.21 per $1 of members' equity in the form of investment and revolving fund certificates.

Overhead and distribution costs for the past fiscal year were reduced from 2.33% to 1.64%, the lowest unit cost in the history of the purchasing division.

Two new feed mills were completed during the year. One is located at Flowery Branch, Ga., and the other at Guntersville, Ala. The division announced that although its original intention was to have the mills supply about 50,000 tons of feed each per year, the Flowery Branch mill was running at 100,000 tons per year and the Guntersville mill at 70,000 tons.

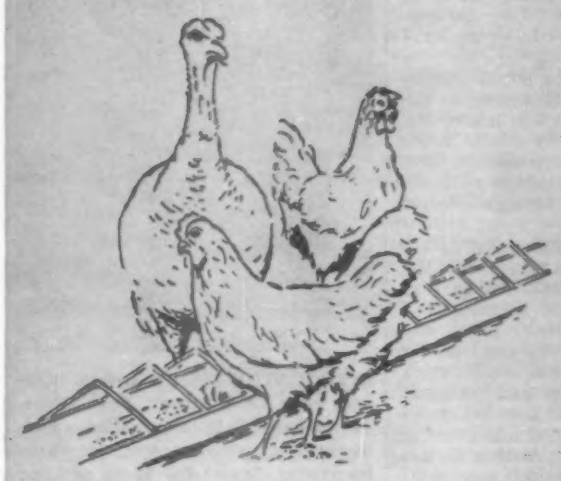
"At the present time," said the publication, "the per-ton cost of operating these mills, including interest, depreciation and all overhead, is about $4 ton."

Feed conversion in broilers produced by CPA's grower-members was 2.501 lb. of feed per pound of meat. This compares with 2.944 five years ago. New records are still being made, according to the publication, and in the first quarter of 1958-59, feed conversion on all birds produced was 2.342 lb. feed per pound of gain, and the total cost of producing broilers is reduced nearly 1¢ lb. from a year earlier.

Mississippi Meeting

JACKSON, MISS. — The annual convention of the Mississippi Cattlemens Assn. will be held here at the Hotel Heidelberg, Feb. 5-6, according to C. D. Maddox, president.

The convention program will include addresses on various aspects of the cattle business by nationally recognized authorities.



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ATTRACTIVE FEED STORE—This is the neat exterior of the Farmer's Feed Store, Sacramento, Cal., which is just as attractive on the inside. The store operates from a business policy which includes neat and attractive displays, friendliness and a well-rounded stock of farm supplies as basic principles. The firm is also operating an integrated egg program in which it owns the birds, markets the eggs and pays the producer. Both the producer and the feed store find the arrangement attractive.

Dealer Finds Integrated Egg Program Builds New Profits

Integration, delivery route system are a dealer's answer to trend to bigger farms and industrialization

Integration has replaced accounts receivable with eggs at the Farmer's Feed Store, Sacramento, Cal., and both the feed dealer and the egg producer are happy about the change.

This is the report of Clarke Denny, manager of the California store which owns the laying hens, markets the eggs and pays the producer in its integrated egg program.

"Where we used to carry $7,000 to $9,000 in accounts receivable, we now have none. Instead of accounts we have eggs," Mr. Denny said. "The operator has no money troubles. He gets 6 to 8¢ doz. for the eggs he produces."

It's figured this way: The operator is paid according to the feed-egg conversion rate he gets. At a feeding rate of 3½ to 4 lb. feed per dozen eggs, he gets about 6¢ doz. That's based on an egg price of 35 to 40¢ doz. If eggs are higher, say 45¢, he gets 9¢. This gives the producer about $1 annually per hen for his work. The top producer has an income of about $6,000.

Producer Response

Farmers like the program, Mr. Denny said. "Especially in cases where they operate on a small scale or lack managerial ability. Most of these are willing to follow instructions or they wouldn't be in the business."

The producer has a better feeling of security because he knows in advance about what he will make, Mr. Denny points out. The dealer takes the eggs from the producers and stores them in a chill room with capacity for 75 cases. The eggs are sold to stores.

Exchanging eggs for accounts receivable has made money for the dealer, too. "We make a satisfactory profit or we wouldn't be doing it," according to Mr. Denny. "We can see possibilities for very good profits in this part of the business."

The move into the egg program came because the feed firm is located in an area where farms are growing in size and industrialization is advancing. Mr. Denny said it is a problem many dealers must face realistically, and one of the answers is integration.

"Another is to completely furnish the farmer with all equipment he needs so he doesn't have to shop elsewhere," he said. "We handle livestock and poultry equipment, sprayers and sanitation materials. A dealer should add as many supplemental lines as he can profitably handle."

Another step taken was furnishing started pullets. "It helps our business," says Mr. Denny. "If we don't furnish pullets the customer will go elsewhere, probably taking his feed business with him.

"Another advantage is that we can use the pullets as replacements in our integration program. The Farmer's Feed Store is not in the hatching business but buys its chicks from a commercial hatchery."

Delivery Routes

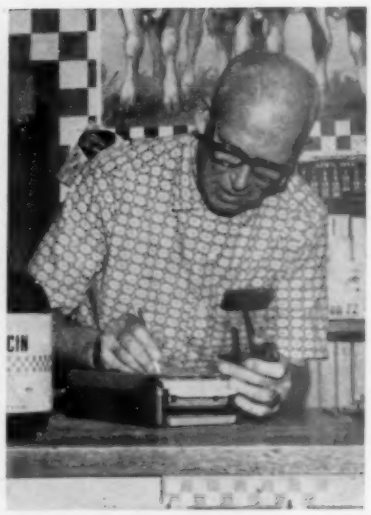
Mr. Denny ranks delivery routes along with the store's egg producer arrangement as being the two most important factors in the store's success.

"We run three delivery routes a week. They are operated by a driver-salesman. It is the only answer for a small user. A delivery charge is made for the service and is necessary in this day of scattered customers. In the case of large orders, we give discounts to offset the delivery charges," says Mr. Denny. "The charges are included in the price and although small, they make it possible for us to deliver.

"In our delivery work, the operator is the driver-salesman. He does the selling, secures new customers, furnishes service.

"A dealer has to go after the business. It won't come by itself. Making deliveries is one way of getting this done," Mr. Denny says.

"In the selling end of the business, service is an important item. In fact, service is selling. Furnished largely by the driver-salesman, it includes help in feeding, management, housing and any other problems of the producer. Service enables the customer to succeed—to remain a customer," Mr. Denny points out.



INTEGRATOR—Clarke Denny, manager of the Farmer's Feed Store, Sacramento, Cal., is operating an integrated egg program from his store. Increasing farm size is a problem dealers must face realistically, he maintains, and as ways to answer the challenge he uses the integrated program and carries a stock of farm supplies that keeps his producers coming to him.

Credit

Credit needs to be watched constantly, explains Mr. Denny. By a careful check on credit, which is extended for 30 or 60 days, losses have been practically nil. Customers often buy more freely when payments can

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be deferred for a short time, Mr. Denny believes.

Neatness and orderliness in the farm store are almost obsessions with Mr. Denny. The neat displays, clean merchandise and full shelves give the customer the invitation to buy. Here is how Mr. Denny explains his views on orderliness:

"At one time I worked in a store with dirty windows. It did not impress me. I resolved that when I became a manager I would pay attention to neatness. It takes constant attention but it's worth it. It pays off in extra sales."

Another of Mr. Denny's selling principles is to greet each prospect promptly with a friendly remark, such as, "Is there anything we can do for you?" Another is to use the "suggestive selling" device.

Suggestive Selling

"In our store it is common practice —after a customer has purchased a product—to ask whether he needs a sanitation product, a feeder or other related item. It's surprising what can be sold by using this technique."

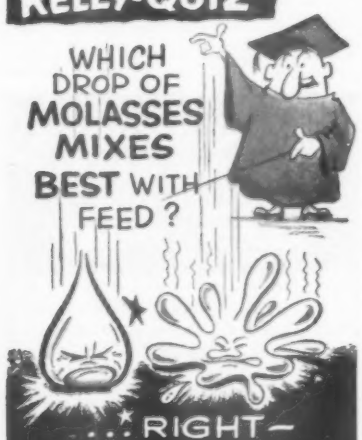
A trophy signifying that the store is in the 2,500-ton feed sales per year class is proudly displayed. The Farmer's Feed Store handles Purina feeds which account for about 75% of the gross income.

The store has been in business more than 20 years. Provision for parking, as well as a loading dock, is made in the rear. Since much of the merchandise is delivered, parking problems are largely avoided. The floor area of the store is 5,000 sq. ft.

Mr. Denny is confident of the future. "Whenever small stores have gone out of business, we have acquired some larger accounts. Our business is a going concern."

Mr. Denny is not without a personal philosophy. Says he, "If you treat a customer as you want to be treated yourself it will pay off. It has paid me for 35 years."

KELLY-QUIZ



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Mississippi Reports Caged Layers Return More than Floor Hens

STATE COLLEGE, MISS.—Caged layers gave better returns than floor hens in a three-year test at Mississippi State College Agricultural Experiment Station, but researchers handling the test said the choice of system to use may well be a matter of personal preference.

Reporting in Mississippi Farm Research, publication of the experiment station, T. Sanders and H. D. Morgan said the cage hens in the tests consumed more feed, laid more eggs and provided easier culling.

The researchers found no difference in egg quality, or sale value, between the two groups. Mortality was about 3% higher for the floor group, and a considerable amount of this was due to cannibalism and peck out.

The floor plan was easier to clean, created less odor, and the fly problem was only a minor factor compared with the cage group, they said.

"The cage hen returned somewhat more to her owner (labor income of 84¢ per hen, compared with 52¢) than one on a floor," the researchers reported. "But this is not all to consider in a commercial egg operation. A house to be used for laying hens should be built with one plan in mind and not used as a cage house or floor house at different times. The added cost of cages should be considered, along with the odor and fly problems they cause. A constant source of replacements must be maintained for both groups and a dependable market for eggs and cull hens must be available. The greatest problem encountered in this test was possibly the replacement factor."

The test was carried out over a period of three years. Leghorn strains were used at all times and were housed after being raised on range. Pullets were housed when they reached about 10% production.

Both houses had automatic lights providing a 14-hour day. The floor house was supplied with wood shavings about 10 in. deep for litter and kept in a loose, dry condition. Droppings from the cage house were allowed to cone up and were removed once a year. Wood shavings were used in each aisle to help with moisture absorption.

The feeding program was the same over the entire test, with both groups getting a commercial ration as a complete feed. Eggs were collected twice daily in the floor group to prevent breakage and dirty eggs. The cage eggs were collected once a day and production cards were maintained for each hen. Individual worming of the hens was consistent with both groups throughout the test. Groups of 300 birds each were used the first year and of 500 each the second and third years.

The three-year average shows total income of $2,393.61 for the cages and $2,088.94 for the floor hens. Hen cost and miscellaneous costs were about the same for both groups, but feed costs averaged $1,354.14 for the cages, compared with $1,196.10 for the floor hens.

Poultry Laboratory Dedicated in California

SACRAMENTO — A new $100,000 state poultry pathology laboratory, built to replace a war surplus building which housed the state facility at Turlock, Cal., for 11 years was dedicated recently.

It is one of six laboratories operated in California by the State Bureau of Livestock Disease Control to diagnose diseases of chickens and turkeys. Turlock is the hub of the California turkey industry.

Dr. S. E. Jamison will continue in charge of the laboratory which serves Stanislaus, San Joaquin, Merced, Tuolumne, Calaveras and Mariposa counties.

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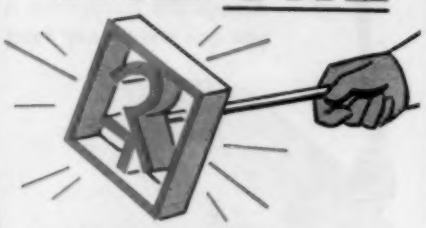

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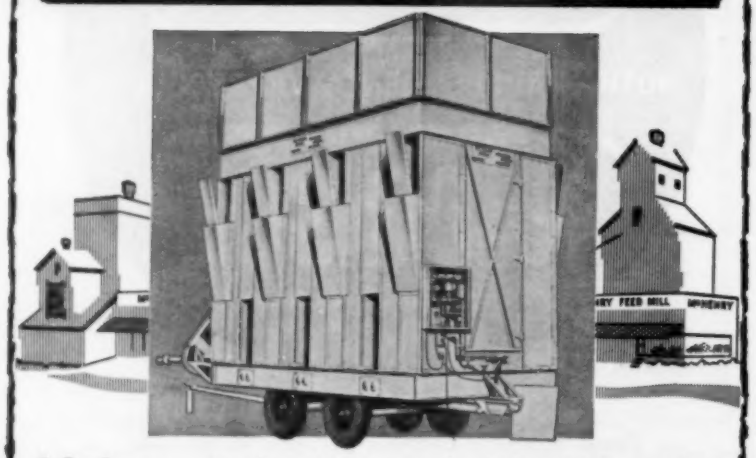

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COMPLETE TONE FEEDS COURSE—Fifteen feed representatives from five Upper Midwest states completed a feeding and management short course held recently in Minneapolis. The group was the seventh taking the service course, sponsored by Peavey Feed Mills, Minneapolis, manufacturer of Tone Feeds. Pictured are (left to right): Front row—Ambrose Ulwelling, Flandreau, S.D.; Harold James, Boyceville, Wis.; Daniel Sonsalla, Arcadia, Wis.; O. Larson, Hendrum, Minn.; James Smith, Huron, S.D.; Richard Lubke, Bismarck, N.D., and Ray Nelson, Utica, Minn. Back row—Martin Staigle, Stanton, N.D.; Gordon Johnson, Duluth, Minn.; Lawrence Henry, Stockton, Minn.; Dave Beyer, Almond, Wis.; Harold C. Unterseher, Stanton, N.D.; William Dorn, Frazee, Minn.; Duane Osland, St. James, Minn., and M. E. Dugdale, DeSmet, N.D. The school is designed to help dealers and their personnel assist local feeders.

Backfat Reduced When Methyl Testosterone Is Fed to Barrows

UNIVERSITY PARK, PA.—Methyl testosterone as a feed supplement for pigs shows considerable promise for producing lean meat on barrows, studies at the Pennsylvania State University Agricultural Experiment Station indicate.

A significant decrease in backfat thickness was found on carcasses from barrows fed methyl testosterone from starting weights of 50 and 100 lb. The hormone was fed at levels of 6 and 12 mg. per pound of total feed.

Results of the experiment were published in Science for the Farmer, an experiment station publication, by Dr. J. L. Gobble, Dr. R. C. Miller, G. W. Sherritt, P. T. Ziegler and Dr. H. W. Dunne.

According to the report, barrows started on this synthetic male hormone-like material at 150 lb. showed no improvement in meat-type carcass. "Apparently the feeding period from 150 to 220 lb. slaughter weight is not long enough to produce desired results, as noted in research elsewhere," it was suggested in the publication.

"These tests indicate there is no benefit from feeding methyl testosterone to gilts. The male hormone inhibited growth of the reproductive tracts of gilts and should not be fed to gilts used for breeding. In addition, the hormone did not improve the quality of gilt carcasses."

It was noted further that no general recommendations can be made as yet concerning the feeding of methyl testosterone to pigs, that much work is still needed to determine best feeding rates for profitable rate-of-gain and efficient conversion of feed to body weight—both major factors in raising hogs. Length of feeding period had no significant effect on rate-of-gain or feed conversion at either 6 or 12 mg. rates of feeding.

In one experiment, feeding the hormone at 12 mg. per pound of feed, the percentage of protein increased significantly in trimmed Boston butts from barrows weighing either 50 or 100 lb. when started on the hormone. Percentage of fat was also decreased significantly.

The researchers said that studies at other experiment stations confirm that feeding of methyl testosterone reduces the percentage of backfat and increases percentages of lean cuts in pork, and that it has also been shown that feeding relatively high levels of methyl testosterone significantly reduces rate of gain, despite the improved carcass. The latter finding will be tested further at the Pennsylvania station.

Georgia Layer Feeding Test Results Reported

TIFTON, GA.—Feeding tests made at the Midville (Ga.) Experiment Station of the University of Georgia show that it costs 2½¢ doz. less to produce eggs when the hens are fed on concentrates plus whole oats in comparison with hens fed on an all-mash diet, researchers report.

Orion L. Brooks, superintendent of the Midville station, said the tests were made in efforts to determine most economical feeding methods.

The information was given at the "Egg Production and Egg Marketing" short course at Abraham Baldwin Agricultural College in Tifton recently.

Milton V. Dendy of Tifton, extension poultry specialist, advised growers to restrict feed to growing fowls to increase size of the eggs.

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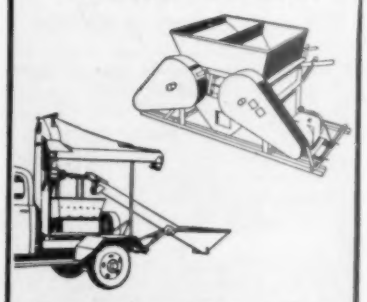

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POULTRY

(Continued from page 28)

and egg production, combined with stress, are responsible in most cases for raising the turkey's requirement for those nutrients so that the normal level is no longer adequate. As the genetic potential of the turkey is improved, nutrient standards need to be revised.

Compatibility of Water Medication with Feed Medication: A discussion of the use of drugs in feeds and water was presented by Dr. Reed R. Rumsey, head, pathology department, Dr. Salsbury's Laboratories, Charles City, Iowa. Excerpts from his talk follow:

"Mass production methods in the poultry industry mean we must use the feed and drinking water to give medication to thousands of birds. . . .

"The question always is presented under field conditions as to what water medication and what concentrate may be used when certain drugs are contained in the feed. There has been very little research work done in this direction. Most of these decisions are the responsibility of the veterinarian and field service representative.

"Basic rules of drug therapy include: (1) Diagnosis first and foremost. (2) Only one medical formulation for treatment or prevention of a specific disease should be used at one time. (3) Use proper dosage. (4) Proper period of treatment; follow manufacturer's recommendations. (5) Suggest management and sanitation programs. . . .

"The incompatibilities of the many drugs on the market today are almost impossible to define. Toxicity must be prevented by intelligent use of drugs under field conditions. Warnings on the label should be followed, and quantity and length of treatment should be closely watched. We must always consider what drug is in the feed before proceeding with water medication. . . . Let's remember that medicinals are only an aid in prevention of a disease; let us use them as intended."

The Problems of Developing a Poultry Practice: Dr. C. L. Nelson, a veterinarian at Jewell, Iowa, criticized conditions which he said have made many veterinarians adverse to entering the poultry field. He mentioned such things as "quackery, high-pressure salesmanship, mis-diagnosis, misleading advertising and practices in the remedy business."

He offered the following suggestions aimed at working agreements between vets and feed companies:

For Veterinarians: (1) Equip your office with laboratory equipment to aid in diagnosis of poultry diseases. (2) Let the feed representative know of your interest in poultry work. (3) Familiarize yourself with management problems. (4) Learn nutritional requirements of poultry and become familar with feeding programs. (5) Never condemn a feed as the cause of an ailment, or make a diagnosis of a deficiency disease, without having a preponderance of evidence, and then first notify the feed man. (6) Charge a feed for diagnosis and do not perform autopsies free of charge with the hope of making it up on medicable cases. (7) Do not resent periodic calls by feed men to flocks they have under contract. (8) Do not medicate flocks unless there is a specific reason. (9) Do not let flock-owners medicate birds promiscuously. (10) Contact the feed man before recommending addition of medicaments to feeds.

For Feed Men: (1) Contact vets to determine if they are interested in poultry disease control. (2) Provide vets with descriptions of feeds and feeding programs. (3) Instruct feed customers to submit birds to vets willing to accept the responsibility in event of a disease outbreak. (4) Discourage salesmen from attempting to make a diagnosis and selling medication. (5) Do not become involved in the remedy business. (6) If the occasion should arise where feed has been blamed, consult the vet who made the diagnosis. (7) Urge flock owners under contract to refrain from buying expensive drugs from remedy salesmen for periodic medication. (8) Do not overpopulate individual farms with poultry.

SMALL ANIMALS: Small animals as well as livestock and poultry received attention at the conference.

Proper Nutrition of Pets a Preventive of Disease: The nutrient requirements of dogs and the meeting of these requirements came in for discussion by Dr. Hovey M. Burgess, General Foods Corp., Battle Creek, Mich. Considerable attention, he said, must be paid to assuring proper intake of all of various vitamins, minerals, protein, carbohydrates and other as yet unknown factors. Also, they should be incorporated into foods in a way that there can be no segregation in the package.

Proper Nutrition for Small Animals: Dr. G. T. Edds, Fort Dodge (Iowa) Laboratories, Inc., said that although the small animal receives much better nutrition than heretofore, at least 50% of these animals are still suffering from various forms of nutritional deficiencies. Much more work is needed.

Dr. Edds discussed in detail such things as caloric intake, protein and amino acids, vitamin E, and fat.

Feeding Unusual Pets: Dr. Lester E. Fisher, Berwyn (Ill.) Animal Hospital, said that one of his pet problems is people who buy unusual pets without some preliminary study of the pet and associated problems. Many of the dietary problems are irreversible by the time they are presented to the clinic.

Dr. Fisher presented suggestions on feeding a wide range of birds and animals — parakeet, canary, parrot, monkey, rabbit, guinea pig, mouse and white rat, hamster, skunk, snake, turtle, ocelot and alligator.

THE WESTERN FEEDLOTS REPORT . . .

"FROM A FASTER START TO A FINER FINISH,

FEED 'EM DYNAFAC!"

"You can almost see them growing . . . those slick hair coats and big briskets are what I like . . . no scours at all since we started feeding Dynafac . . . man, what a difference in feed costs!"

These are the comments being made by feedlot operators all over the West. They have proved it to themselves...and so can you...that feeding Dynafac gives bigger profits. That is because it takes less feed per pound of gain.

Operators report good results using both Dynafac and hormones, either oral or implant. Each additive works in its own way to give you improved efficiency. Not a hormone, Dynafac remains in the intestinal tract to do its job—controls harmful bacteria and fungi without disturbing beneficial organisms in the paunch.

Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

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WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

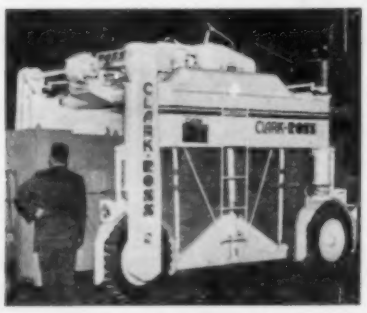
DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7295—Equipment Brochures

Oakes Manufacturing Co. will distribute four different catalogs on poultry, hog, sprayer and mechanical feeder lines of equipment. In the past, the company only issued one general catalog, but additions to the various lines made it necessary for four publications, the company says. All but the mechanical feeder equipment catalog are ready for distribution, and that will be ready after the first of the year, the company says. For copies of any or all of the booklets, check No. 7295 on the coupon and mail.

No. 7302—Bulk Handling System

AAA Equipment Service Co. announces a bulk handling system that eliminates need for blowing or augering. With the system, one-ton steel bins are used to hold the feed. A Clark-Ross straddle carrier is used, with the vehicle carrying the load. At the filling point, the bin is deposited on an "A" frame, which allows the bin to be tilted. When the hatch on the bin is opened, it can be completely filled. Then the straddle carrier picks up the bin or bins and it drops one or more off at any point, picking up empty bins. The device can be designed to carry as many bins as desired, up to 60,000 lb. For more details, check No. 7302 and mail.

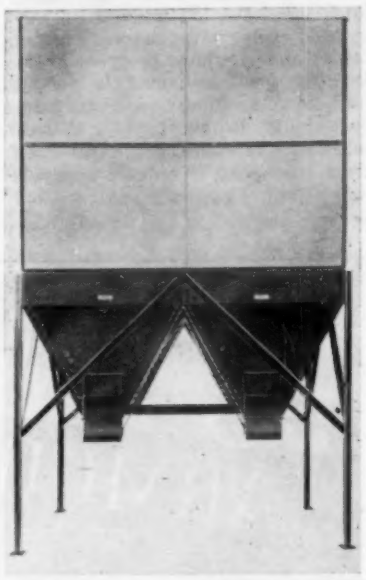


No. 7299—Animal Health Product

Neovim, a medication and growth stimulant for chickens, turkeys and hogs has been introduced by Pratt Laboratories, Inc. The company says the product was developed to treat CRD and bluecomb in chickens, infectious sinusitis in turkeys and bacterial enteritis in hogs. Procaine penicillin and streptomycin are the principal ingredients and a supplement of vitamin concentrate has been added, the company says. For details, check No. 7299 on the coupon and mail.

No. 7296—20-Ton Storage Bin

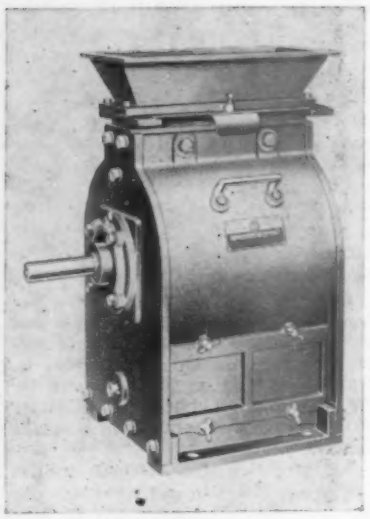
A 20-ton cluster bin is the newest addition to the Leach Manufacturing Co. line of bins. The new bin, designed for use in small feed mills for storage of all types of feeds, has four 5-ton compartments to carry four different ingredients or concentrates. Each compartment had two 60° angles and one 45° with the front almost vertical. The bin is 10 ft. sq., has an overall height of 16½ ft. giving a



clearance of 42 in. under rotary gates. The base is 14 gauge steel reinforced with heavy angle iron. For more details, check No. 7296 and mail.

No. 7305—Moisture Balance

The Ohaus Moisture Determination Balance is a combination drying unit and precision balance which provides an easy way to measure moisture content of a wide variety of products and materials, announced Seedburo Equipment Co. The unit can be used for solids or liquids and shows the percentage of moisture directly to plus or minus 0.170. The percentage of moisture loss can be read directly throughout the entire cycle as the moisture is driven off, the company says. For details, check No. 7305 and mail to this publication.



No. 7294—Rotary Knife Cutter

A rotary knife cutter for usage in feed mills and other industrial fields, has been developed by Munson Mill Machinery Co. The cutter is available in from 1,500 to 2,000 lb. per hour capacity to 6,000 to 12,000 lb. capacity. The company said a feature of the cutter is the low power consumption in relation to the work done. Check No. 7294 on the coupon and mail it to this publication for details.

No. 7301—Folder on Batch Mixers

Rotary batch mixers are described in a folder recently released by the Munson Mill Machinery Co. The four-page, two-color folder contains pictures and specifications of two types of mixers—Type 4 and Type 7. Op-

tional features of the mixers, such as quick-open door, internal vent, air control cylinder, flush valve, strip heater and internal spray pipe, are also described. For copies, check No. 7301 on the coupon and mail to this publication.

No. 7297—Whey Product

Western Condensing Co. announces "Confetti-Way" a product composed of whey particles comprising a mix-

Send me information on the items marked:

- ☐ No. 7294—Rotary Knife Cutter
- ☐ No. 7295—Equipment Brochures
- ☐ No. 7296—20-Ton Storage Bin
- ☐ No. 7297—Whey Product
- ☐ No. 7298—Alfalfa Bale Shredder
- ☐ No. 7299—Animal Health Product
- ☐ No. 7301—Folder on Batch Mixers
- ☐ No. 7302—Bulk Handling System
- ☐ No. 7303—Cobalt Bullets
- ☐ No. 7304—Round Hog Feeder
- ☐ No. 7305—Moisture Balance
- ☐ No. 7306—Turkey Booklet

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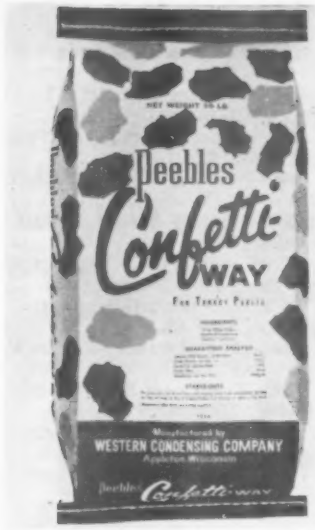


ture of six certified food colors. According to the company, field tests show that the material will prevent turkey poult starve-outs because the bright concentration of color will start the day-old birds eating right away. The product is available in 10 and 50-lb. bags. For details check No. 7297 on the coupon and mail.

No. 7298—Alfalfa Bale Shredder

A new model alfalfa bale shredder has been announced by Winsted Manufacturing Co. through its national distributor, Lakeland Engineering Equipment Co. The unit, called the "Winsted Roto-Matic Alfalfa Bale Shredder," features a 5 h.p. motor direct connected to a blower and a 3 h.p. motor connected to the shredding drums through a variable speed drive. Check No. 7298 on the coupon and mail it for details.

No. 7303—Cobalt Bullets

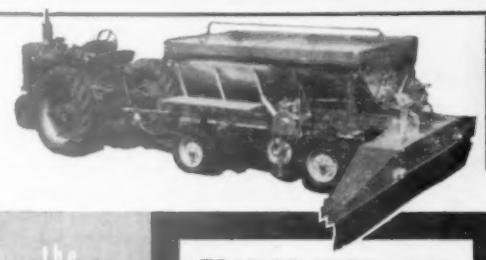
"Permaco" Cobalt Bullets, a product of Nicholas of America, Ltd., is now being introduced to sheepmen in the U.S. after extensive field trials in Australia. According to the company, the bullets are a one-dose way to provide sheep with a continuous supply of cobalt. The bullet is deposited down the animal's throat by means of an ejector gun; the animal then swallows the bullet and it lodges in the forestomach where it remains for a year or more to release a daily supply of cobalt. Check No. 7303 on the coupon and mail for details.

No. 7306—Turkey Booklet

A new addition of the Whitmoyer Turkey Fax is now available from Whitmoyer Laboratories, Inc. Prepared by the Whitmoyer technical staff, the booklet features subjects on turkey health and diseases, facts and figures on management questions, information on Whitmoyer health products and reference details on dressing and marketing. For copies, check No. 7306 and mail to this publication.

No. 7304—Round Hog Feeder

Oakes Manufacturing Co., subsidiary of Food Machinery & Chemical



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You can use your present tractor and, in most cases, your wagon chassis to pull this new self-contained Trailer Spreader. Not only will you then be utilizing your present equipment more fully and profitably — you will be adding an important unit to your custom spreading service.

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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

More and More . . . Feed Mills Are using More and More Stabilized ANIMAL FATS and MEAT PROTEINS

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helps
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reduce
bag costs
$4.05 per M

In Multiwall packaging, paradoxically, it's sometimes necessary to add in order to reduce. Take the case of one leading company whose bag designs recently were analyzed by Union Packaging Specialist Gene Cartledge.

The firm uses Sewn Open Mouth Multiwalls in part of its operation. Cartledge recommended adding Union's special SEW STRONG construction (reinforcing strips at top and bottom of bag). The stronger closure enabled the basis weight of each bag to be reduced by 10#. The new sewing method led to a reduction in bag length, an improved bag design—and $4.05 per M savings! Another recommendation: convert all the firm's present Sewn Valve Multiwalls to Sewn Open Mouth types. This complete changeover will further streamline bagging and, based on the company's annual requirements, result in thousands of dollars in additional savings.

Union Multiwall Recommendations are based on this 5-Star Packaging Efficiency Plan

★ DESIGN
★ EQUIPMENT
★ CONSTRUCTION
★ SPECIFICATION CONTROL
★ PLANT SURVEY

Every day, Union's 5-Star Packaging Efficiency Plan is helping packers like yourself get more for their Multiwall investment. Yet it costs nothing to put it into action. Write today for complete details.

Better Multiwall performance through better planning

union camp

UNION'S PACKAGE ENGINEERING DEPARTMENT will study your Multiwall bagging methods and equipment and make appropriate recommendations, regardless of the brand of Multiwalls you are now using.

UNION MULTIWALL BAGS
UNION BAG-CAMP PAPER CORPORATION
233 BROADWAY, NEW YORK 7, N. Y.

Corp., announces the "Circle D" round hog feeder with a new type of base construction. Eleven gauge steel is spun into a one-piece base that is guaranteed to last 20 years. It has a porcelain coating that is fused to the base. The unit is available in two sizes, 35 bu. and 50 bu., and each feeder has 10 water-tight "D-Hole" feeder openings. For details, check No. 7304 on the coupon and mail to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7238—Hog health handbook, Dr. Salsbury's Laboratories.

No. 7239—High-speed sewing head, Union Special Machine Co.

No. 7240—Feed supplement, Peter Hand Foundation.

No. 7241—High-capacity grain dryer, Behlen Manufacturing Co.

No. 7242—Scale data sheet, Richardson Scale Co.

No. 7243—Steel building literature, Butler Manufacturing Co.

No. 7244 — Formula feed folder, Sohio Chemical Co.

No. 7245 — Materials handling units, Daffin Manufacturing Co.

No. 7246—Poultry disease booklet, Sterwin Chemicals, Inc.

No. 7247—Chemical company brochure, U.S. Industrial Division, National Distillers and Chemical Corp.

No. 7248 — Animal health folder, Merck & Co., Inc.

No. 7249 — Poultry health folder, Merck & Co., Inc.

No. 7250—Automatic egg counter, Hawkes Cage System.

No. 7251—Poultry de-winger, Dakota Ranches.

No. 7252—Hammermill literature, Prater Pulverizer Co.

No. 7253—Folder on "Penstrep" line, Merck & Co.

No. 7254—Texturing material, Philip R. Park, Inc.

No. 7255—Ventilation system, Rolfes Grain Aeration Companies.

No. 7256—Story on feed mills, Sprout, Waldron & Co., Inc.

No. 7257—Mailing piece on pulverizers, Prater Pulverizer Co.

No. 7258—Weigher, filler bulletin, Richardson Scale Co.

No. 7259—Stone detector, Seedburo Equipment Co.

No. 7260—Cattle health product, Merck & Co., Inc.

No. 7261—Equipment brochure, FM Engineering Co., Inc.

No. 7262—Custom feed milling booklet, Prater Pulverizer Co.

No. 7263—Hammer mill, Sprout, Waldron & Co.

No. 7264—Poultry feeder, Oakes Manufacturing Co.

No. 7265—Animal health product, Pratt Laboratories, Inc.

No. 7266 — Magnetic separator housing, Eriez Manufacturing Co.

No. 7267 — Pneumatic conveying bulletin, The Day Co.

No. 7268—Portable aeration unit, Gerber Roto-Flo Co.

No. 7269—Pneumatic handling system, Sprout, Waldron & Co., Inc.

No. 7270 — Automatic typewriter readout, Richardson Scale Co.

No. 7271 — Gross bagging scale, Richardson Scale Co.

No. 7272—Impact mill, "Entoleter" Division, Safety Industries, Inc.

No. 7273—Revolving valve, Gerber Sheet Metal, Inc.

No. 7274 — Dryer control panel, Campbell Dryer Co.

No. 7275—Booklet on fats in feeds, Monsanto Chemical Co.

No. 7276—Automatic feed weigher, Seedburo Equipment Co.

No. 7277—Poultry feed brochure, Mechanical Poultry Feeder Assn.

No. 7278—Report on bulk handling, Towmotor Corp.

No. 7279 — Metal-free slat floor, Munro Egg Automation Co.

No. 7280 — Bulk storage-mixing tank, Columbian Steel Tank Co.

No. 7281—Bin level indicator, Roto-Indicator.

No. 7282—Antibiotic technical bulletin, Merck & Co., Inc.

No. 7283 — Rotary batch blender, Munson Mill Machinery Co.

No. 7284—Hormone implants, E. R. Squibb & Sons.

No. 7285 — Pneumatic unloading system, Sprout, Waldron & Co., Inc.

No. 7286 — Bag stacker bulletin, Power Curve Conveyor Co.

No. 7287—Filling machine feeder, Frazier & Son.

No. 7288 — Conveying equipment, Yancey Sales, Inc.

No. 7290 — Portable air vibrator, Cleveland Vibrator Co.

No. 7291—Animal health booklet, Abbott Laboratories.

No. 7292 — Punched card reader, Richardson Scale Co.

No. 7293—Tramrail booklet, Cleveland Tramrail Division, Cleveland Crane & Engineering Co.

NUTRITIONIST VISITS

WASHINGTON—W. R. Muir, one of Britain's experts in animal and poultry nutrition, is currently studying broiler production methods in the U.S. Mr. Muir is a former lecturer at Britain's Royal Veterinary College and now is the head of the Bibbey Research Station which is maintained by a feed manufacturer. Mr. Muir is credited with a big part in the development of high energy feed for British poultry.

G-AN-EN *adds both*

- *important milk nutrients*
- *extra nose appeal*

It's quick! It's easy! It's profitable! Just a 5% ratio of G-AN-EN improves any ordinary mix formula with appetizing flavor dogs can't resist . . . and vital food values dogs need for sturdy growth.

G-AN-EN is a concentration of all these ingredients in handy dry form: dried whole whey, dried buttermilk, torula dried yeast, brewers' dried yeast, cheese rinds, sulphates of iron, zinc and copper, manganese chloride, niacin, vitamin A and D feeding oil (stability-improved).

ALL THESE EXTRA FOOD VALUES ARE CONTAINED IN G-AN-EN:

6 VITAMINS—vitamins A, D_3, B_1, riboflavin, niacin, and pantothenic acid.

6 MINERALS—valuable milk minerals, calcium and phosphorus, *plus* the mineral salts of copper, iron, zinc and manganese chloride.

MILK PROTEIN—The milk protein in G-AN-EN contains all the essential amino acids in the milk proteins lactalbumin and casein.

You'll find G-AN-EN is quick and easy to blend. It's packed in 50-lb. bags. Start today to improve your mixes this easy way.

G-AN-EN *is a Kraft product* *Order from* KRAFT FOODS *Division of National Dairy Products* 500 Peshtigo Court Chicago 90, Illinois

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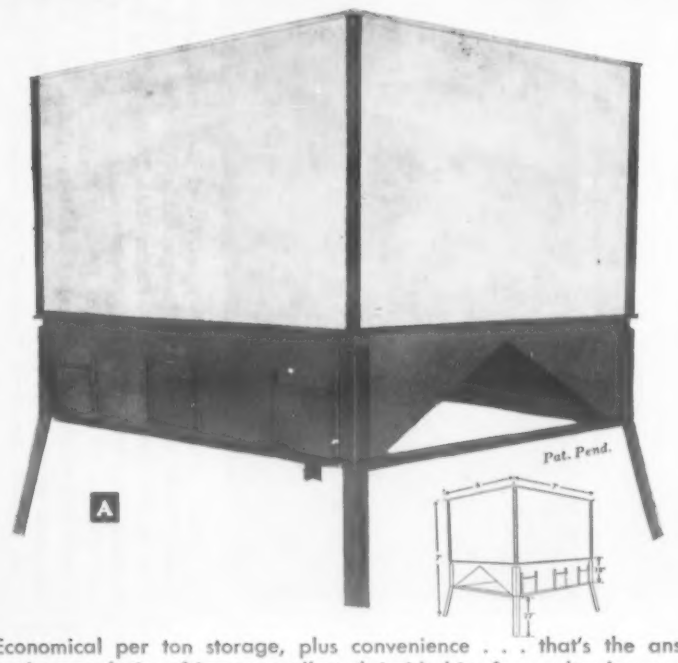
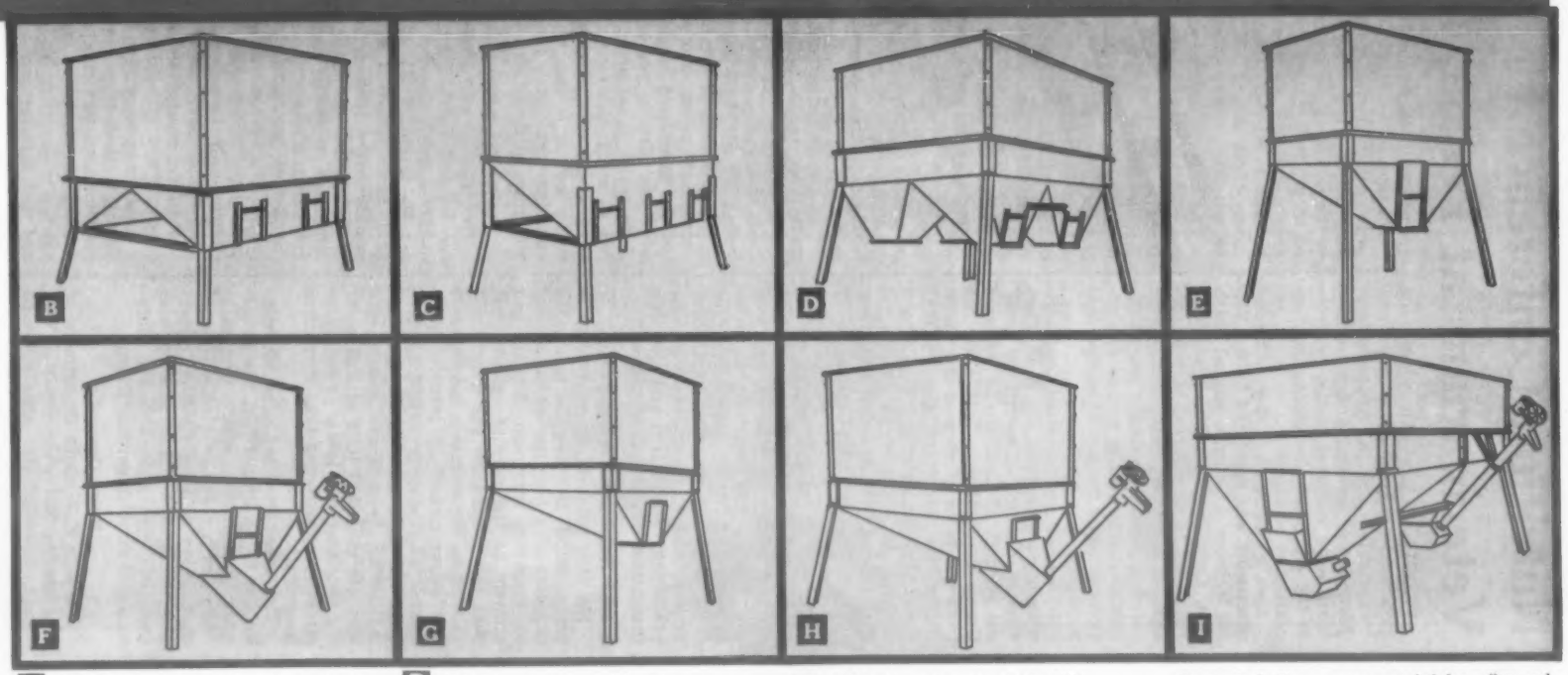
Lemanco

QUALITY BULK FEED BINS FOR EVERY FEEDING PURPOSE

DESIGNED TO ACCEPT AIR OR AUGER DELIVERY





Economical per ton storage, plus convenience . . . that's the answer to the popularity of Lemanco all-steel, inside bins for poultry houses and other types of bulk feeding operations.

Lemanco bins are rigidly constructed and built to last. Bases — all welded 14 gauge steel (16 gauge for 6618-42 and 5424-24); sides — 16 gauge galvanized steel; legs — 3" x 3" x ¼" angles on all hopper type bins (2½" x 2½" x ¼" angles on side draw bins). Specially formed corners give extra reinforcement.

A 7618-48-6D 6 door (4 ton) height 7'0"
Three doors on side make for easy cleanout. Especially desirable for pullet and hen feeding.

B 7618-48-4D 4 door (4 ton) height 7'0"
6618-42 4 door (3 ton) height 6'6"
Regular all-purpose 4-door bulk feed bin.

C 7424-42 (2½ ton) height 7'2"
5424-24 (1¼ ton) height 5'6"
Designed for placing against wall or in corners where large capacity not required.

D 7736-36 (4 ton) height 7'6"
Side doors and bottom draw gates permit complete emptying of any type feed including mash of high fat or high fiber content.

E 7540-36G (3¼ ton) height 9'2"
7540-48G (4 ton) height 10'2"
Designed for over automatic feeder where head room is not a problem. If necessary to extend through roof, cover is available or plans furnished to build your own. These bins easily adapted for air delivery.

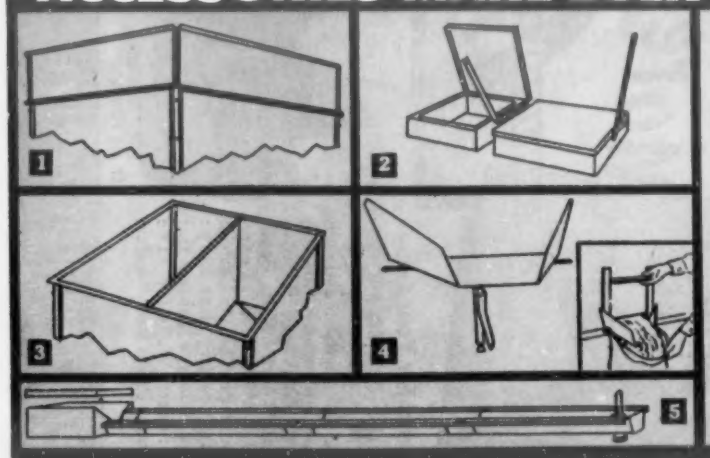
F 7540-36A (3¼ ton) height 8'0"
7540-48A (4 ton) height 9'0"
The large access doors and the pitch of the base make these excellent bins for all feeds.

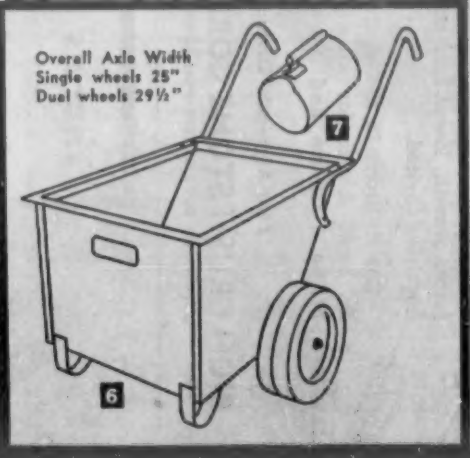
G 7636-36G (4 ton) height 8'6"
7636-48G (5 ton) height 9'6"

H 7636-36A (4 ton) height 7'0"
7636-48A (5 ton) height 8'0"
These models, (illustrated G and H), are designed for locations where head room is limited but large capacity required. Bins are recommended for pellets and crumbles. Due to shallower pitch they are not recommended for mash.

I 10740-24 (5¼ ton) height 6'3"
10740-36 (6½ ton) height 7'3"
10740-48 (8 ton) height 8'3"
Recognizing the trend toward larger capacity houses and mechanical feeding, these bins give inside storage up to 8 tons of feed. When one compartment is emptied auger is easily switched to the other. Two augers available if required.

ACCESSORIES MAKE BULK FEEDING EASIER





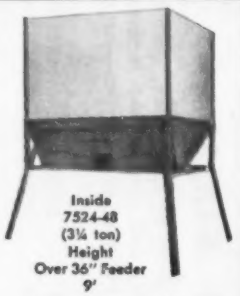
1. Bin extension for a Lemanco 4-ton 7618-48 and 7540-48 bins which give an extra ton of capacity when, or if, needed.
2. The Lemanco Roof Door has a heavy wood base making mounting to any type roof extremely simple. Wire fastened to upright lever permits opening and closing from the truck or ground.
3. Factory built partition to fit a Lemanco standard 4-ton 7618-48 bin designed for those who need a partitioned bin in their feeding program. Pre-punched holes facilitate installation.
4. Picking up feed is a simple chore for one man with the Lemanco Bag-Out, designed for Lemanco bins—a device designed to fit a particular need of the broiler industry.
5. Continuous Easy-to-Clean watering trough fabricated in 10 foot lengths so trough can be sectioned in multiples of 10 feet with smaller joints of 4 feet and 2 feet. Special leak-proof bolted joints, neoprene sealed, no welding necessary. Trouble-free valve and large drainage pipe prevent overflow into house.
6. The Lemanco Feed Barrow, especially designed for the poultry industry, makes the feeding operation easier for any member of the family, young or old. Built of heavy gauge steel and chrome plated handles, it is so balanced that it cannot tip over and spill feed. Carrying capacity 165 pounds. Oilite bearings and dual or single semi-pneumatic wheels. Dual wheels recommended for areas where soft litter used.
7. Companion piece to the Lemanco Feed Barrow, the Feed Tube Scoop, 9" x 6", weight one pound, designed primarily for filling tube feeders without spillage. Vent holes in bottom permit filling and emptying of scoop without sloughing of feed.

PIG FEEDER BINS

For Inside or Outside Use

- Encourage expanded production without increasing labor.
- Permit quantity buying and bulk storage over feeders where needed.
- Protect feed from flies, moisture, rodents and waste.
- Control supply of fresh feed to feeders.

Outside 7524-48 (3¼ ton) with Lemanco Roof Door



Inside 7524-48 (3¼ ton) Height Over 36" Feeder 9'

These bins are of the same quality construction as those designed for the poultry industry.

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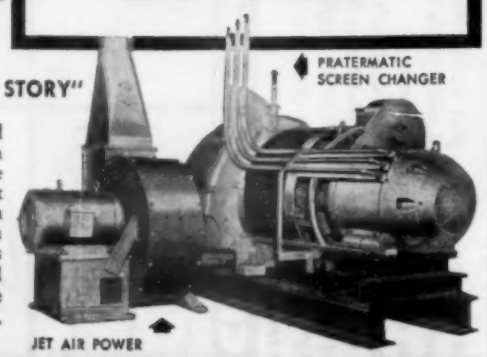

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Nutrition Conference Held for Veterinarians at Peoria, Ill.

PEORIA, ILL. — An address on medicated feed additives as stress combatants, and a comprehensive discussion of treating and preventing bloat were included in the program at the Nutrition Conference for Veterinarians at Peoria.

Also, a discussion of dog food manufacturing was presented by Dr. Victor Heiman, director of animal nutrition, Corn Products Co., New York. Dr. J. R. Allen, director of field service for McMillen Feed Mills, Decatur, Ind., talked about the veterinarian's changing role in animal production caused by the advent of new feed additives.

In his talk on medicated feed additives to combat stress, Dr. R. C. Klussendorf, director of veterinary medical services of Commercial Solvents Corp., Terre Haute, Ind., said that from the point of view of the nutritionist, an important fact is that stress always results in increased cell activity—in every organ, gland and tissue of the body, and that added cell activity demands added nutrients for cell repair.

He pointed out that cell repair requires vitamins, amino acids, minerals and energy or calories, and said that this point is important to veterinarians and nutritionists alike, "for it is the point at which most misunderstandings occur between the practicing veterinarian and the feed formulator or his representative."

Nutritional Imbalance

He also pointed out that feed is compounded to provide the right amounts of a long list of ingredients to maintain maximum health and growth in the normal animal, but that the proportions are unbalanced as soon as the animal is subjected to any stress caused by genetic, managemental, disease or nutritional factors, and that unfortunately an animal under stress almost always eats less. He said that it is at this point the veterinarian's job is to recognize stress symptoms and take corrective measures.

The speaker listed the vitamins known to be involved in the imbalance or deficiency which frequently occurs as a result of stress. He said that amino acids, antibiotics, minerals, hormones and enzymes are also involved, even though much confusion still exists regarding them.

Bloat Control

Dr. Roy E. Nichols, department of veterinary science, University of Wisconsin, classified the agents which have been and are being used to save animals endangered by bloat into four general groups: disinfectants and antiseptics, surface active agents, antibiotics and "general," the last group including evacuating the gut.

He said use of strong disinfectants in the rumen is often accompanied by long periods of recovery and delays in the return of the animals so treated to profitable production. For this reason, this type of treatment should be saved for particularly stubborn cases—those which will not respond to less drastic treatments.

The surface active agents, which function by altering the bubble surfaces and thereby break the froth, include nearly all of the presently used commercially available remedies, the speaker said.

He commented further that many of the commonly used feeds and supplements also possess the kind of froth-controlling action often needed to exploit the feeding of fresh young legumes or intensify grain feeding. "The oils, fats, fatty acids, lipids, alcohols, etc., all possess surface-active properties of varying degrees and can be used for reducing froth. Some are highly digestible—others less so," he said.

"As one might expect, there are limitations to the effectiveness of those agents of this group which are foods themselves, even if they are potent froth breakers."

Dr. Nichols said the antibiotics as therapeutic agents are not indicated for the immediate breaking of froth which is already present, but that their action is on organisms, and is not as rapid as strong disinfectants. They inhibit the production of more froth, and as is true with disinfectants, they may delay a return to normal ruminal digestion.

Bloat Prevention

Dr. Nichols said bloat prevention can be accomplished by two general methods—medicinal or managemental. He said that in the medicinal field, examination of over 250 compounds with surface activity resulted in finding that no single dosed agent remained active in the rumen for more than a few hours, regardless of the degree of solubility of the compound. The speaker said that on the other hand schemes of management which result in repeated intake of edible oils, particularly at feeding times, have resulted in far better success.

Another preventive factor mentioned is that experiences of many cattlemen support the belief that if suitable roughage is available and eaten, the danger of bloat is lessened, and that once cattlemen learn to recognize when their fresh legumes will digest like roughages and when they digest like concentrates, cattlemen will be able to protect their animals by changing their rations to suit the

POULTRY CLINIC—Shown are several of those who attended the recent annual Broiler and Poultry Management and Disease Control Clinic sponsored by Yieldmor Feeds, Inc., Piqua, Ohio. They are (left to right): Dr. J. F. Long, Diagnostic Laboratory, Reynoldsburg, Ohio; George C. Gibson, general manager of Yieldmor; Dr. Leonard P. Bailey, Yieldmor; Dr. Ray C. Klussendorf, Commercial Solvents Corp., Terre Haute, Ind.; Dr. A. R. Winter, chairman of the poultry science department, Ohio State University; Dr. C. A. Bottorf, American Cyanamid Co., Princeton, N.J., and Dr. Harry E. Goldstein, Diagnostic Laboratory, Reynoldsburg, Ohio.

Thomas B. Potter

ADMINISTRATIVE ASSISTANT — Thomas B. Potter has been named administrative assistant to W. Ward Jackson, vice president, sales, Commercial Solvents Corp. Mr. Potter returns to CSC after a two year assignment as secretary and assistant treasurer of Northwest Nitro-Chemicals, Ltd., a CSC Canadian affiliate organized in 1956. Mr. Potter has been associated with Commercial Solvents since 1925, when he joined the company at its Terre Haute, Ind., plant. Since that time, he has held a number of posts of increasing responsibility.

physical requirements of safe roughage digestion.

Dr. Heiman said that a dog's ability to utilize carbohydrates compares favorably with that of man, contrary to a popular belief otherwise, but that there is no specific requirement for carbohydrate as such in a dog diet. It is simply an alternate source of calories, just as it is in a human diet. However, for dogs starches must be properly processed to enhance digestion and avoid diarrhea.

He mentioned that one of the possible dangers of high-fat diets is that the reduced food intake, because of concentrated energy content, will cause imbalance of protein, minerals and vitamins. High fat levels in dog food need cause no concern where proper formulation technics are used.

The speaker explained that the minimum protein requirement for dogs is generally about 20%.

Dr. Heiman said that two minerals required in substantial amounts in dog food are calcium and phosphorus, and that it is important that the ratio of these two elements be kept in balance.

Regarding vitamins, the speaker said that dog foods should be formulated with much wider nutritional safety factors than most other animal foods to allow for a longer storage life, and for the vitamin-destructive processing such as canning, toasting, drying, baking, extruding and pelleting.

Veterinarian's Changing Role

As a result of the introduction of antibiotics, arsenicals and other feed additives, the veterinarian must play a somewhat different but still vital role in animal production, it was explained by Dr. Allen. He said that the new feed additives have not produced a Utopia in disease prevention.

"New diseases are being recognized and old ones that were formerly of little trouble have pushed themselves into the spotlight. We have seen massive alterations of bacterial populations as a result of the use of these bacteriostatic medicaments. Many have been advantageous to the farmer, others may not have been so good," he commented.

The speaker went on to say that when the veterinarian is called out to see sick pigs or cattle, he will likely be examining livestock that are on low level antibiotics (or arsenicals in the case of swine), when the disease outbreak has overridden these medications either due to too low a level being present or a lack of sensitivity to the medication being used.

"It behooves the practicing veterinarian to know what is being used and at what level. This knowledge may help him decide the course of therapy to use. In many cases, the veterinarian has very wisely used sensitivity tests to determine the susceptibility of the organism in question to various antibiotics," Dr. Allen said.

"Certainly this is a rapidly changing profession for the veterinarian. He finds himself by necessity a toxicologist, nutritionist, bacteriologist and virologist, to mention a few. He must excel in all of these fields to do the job that is being asked of him.

"We have seen the veterinarian take this 'challenge of change' and end up a much better veterinarian. He would not want to go back to the pre-antibiotic days any more than the feed industry would want to dispose of riboflavin or other critical factors in feeds."

The speaker concluded his remarks by saying that continued close cooperation of the veterinarian and the feed manufacturer will result in the solving of mutual problems associated with feed additives.

McCarthy Bros. Forms Supply Company

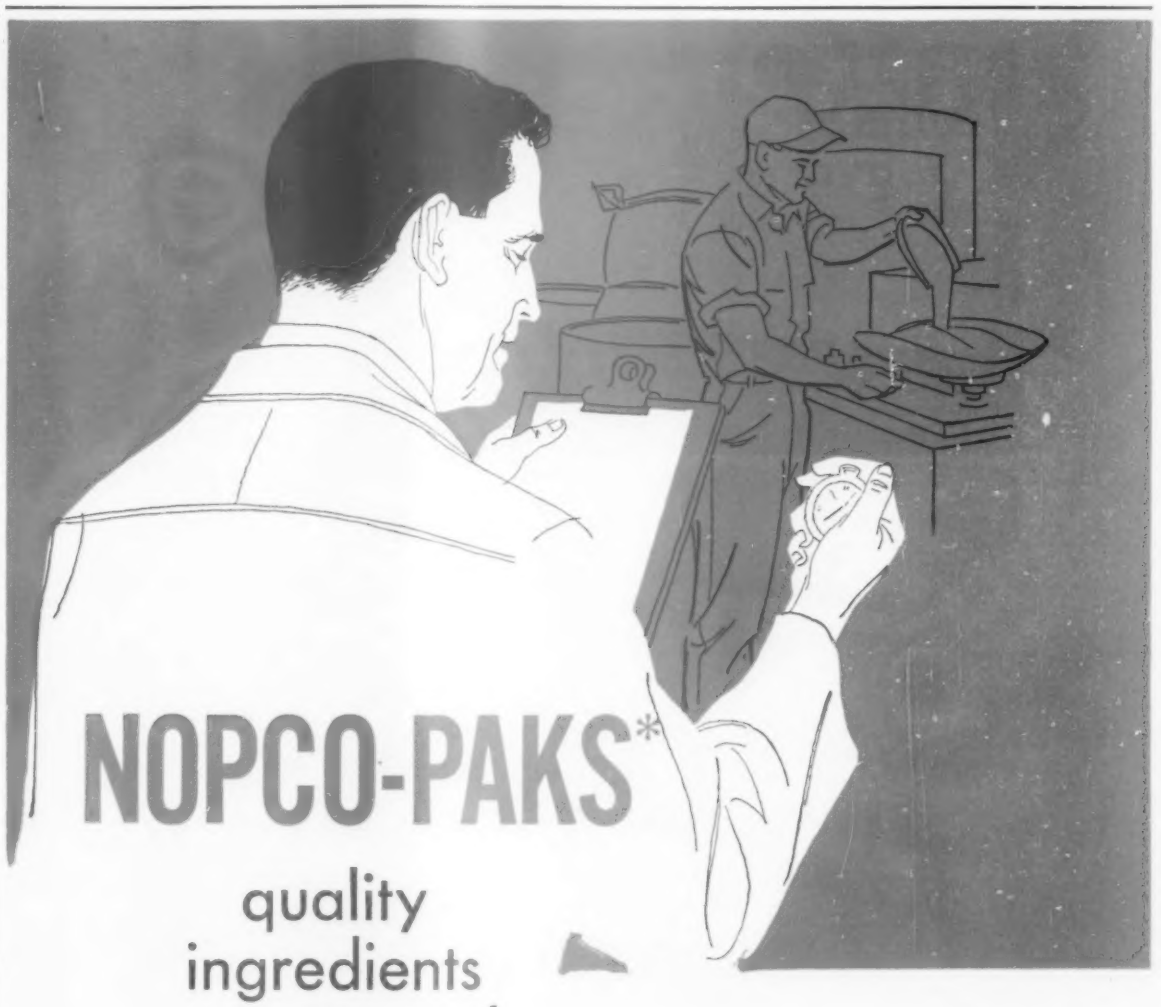
MINNEAPOLIS—McCarthy Bros. Co. has announced the formation of Macko Co., a grain elevator supply operation.

According to the announcement, Macko Co. will supply the necessary products for the day-to-day operation of the country elevator. Included among the products the company will handle are grain testing equipment, fumigants, rodenticides and other allied products, plus new products as they appear.

The new firm will utilize McCarthy Bros. Co.'s field men and the headquarters will be at the Minneapolis office of McCarthy Bros.

Officers include O. C. Snell, manager; C. H. McCarthy, president; T. G. McCarthy, II, vice president, and C. F. Bohn, secretary.

Offices will be maintained in Duluth and Marshall, Minn., Aberdeen, S.D., and Bismarck, N.D.



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Size of Poultry Units

Various yardsticks have been applied from time to time with regard to the most efficient size desirable for a poultry enterprise.

Many factors affect the decision, but Dr. Arthur T. Ringrose, a poultry specialist at Virginia Polytechnic Institute, gives these "dimensions":

When poultry is to be one of the main farm enterprises to take from one fourth to one half the labor of one man, the minimum-sized unit should be either 10,000 broilers (in each of four flocks a year); or 1,000 layers or breeders plus the raising of replacements; or 2,000 turkeys (roasters, one flock a year, or broiler turkeys, at two or more flocks annually).

If the poultry business is to be full time for the labor of one man, the minimum-sized unit should be, according to Dr. Ringrose: 30,000 broilers (in each of four flocks a year); or 4,000 layers plus the raising of replacements; or 5,000 turkeys (one flock of roasters, or two or more flocks of broilers a year).

The specialist adds that the part-time poultryman may find it necessary to increase the size of his operation for improved efficiency.

◆

Swine Influenza Risks

Death losses from swine influenza are usually low, but loss of weight and retarded rate of gain can run up quite a bill, Kansas State College veterinarians point out.

The disease has a sudden onset and spreads rapidly throughout the herd. Infected hogs go off feed, appear listless, run a high fever and show pain and muscular weakness. Usually a cough develops and a slight discharge from the nose is evident.

Best solution to the problem is well-bedded housing, free from drafts, along with early medication for the infected hogs.

◆

Colostrum Feed Value

Many dairymen are freezing surplus colostrum milk for both emergency use and for extended use in feeding small calves beyond the usual few days after they are born.

Two researchers at Ohio State University followed the plan of using all the colostrum from newly-freshened cows in their 70-cow herd. They sold 4,000 lb. more milk in one year by changing to this calf feeding plan. In addition, they report, their calves made greater weight gains. The feeding of colostrum did not cause scours and, in fact, feeding it to calves that were already scouring brought good results.

The colostrum milk can be fed straight or mixed with other milk for calves older than a few days. Care must be taken not to overfeed it, however, as this may cause digestive upset, say the Ohio State researchers.

Canadian Livestock Exports Reported

OTTAWA — Exports of Canadian livestock to the U.S. between Jan. 1 and Nov. 22 (with comparative totals for 1957 in parentheses) were: Feeder cattle, 411,514 (141,818); dairy and purebred cattle, 41,763 (34,295); calves, 15,512 (11,673); hogs, 5,492 (557), and sheep and lambs, 33,818 (13,437).

Exports of dressed beef to all countries to Nov. 22 totaled 51,250,545 lb., an increase of 45% compared to the corresponding period of 1957; pork 51,827,461 lb., up 62% and mutton and lamb 987,443 lb., up 111%.

Central control panel of one of the largest Select-O-Weigh systems ever installed. Material is automatically conveyed to 2 Richardson scales by 40 ingredient feeders. Programming is done by 2 punched card readers

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Select-O-Weigh Feed Production will provide you with increased production and at the same time lower your labor costs—give you a more uniform, better quality product—and substantially improve your plant housekeeping. Your customer will know his feed is prepared with the most modern and accurate means available. And, with a Richardson Select-O-Weigh automatic proportioning system, you can program gates, feeders, scales, mixers, and other equipment in proper sequence.

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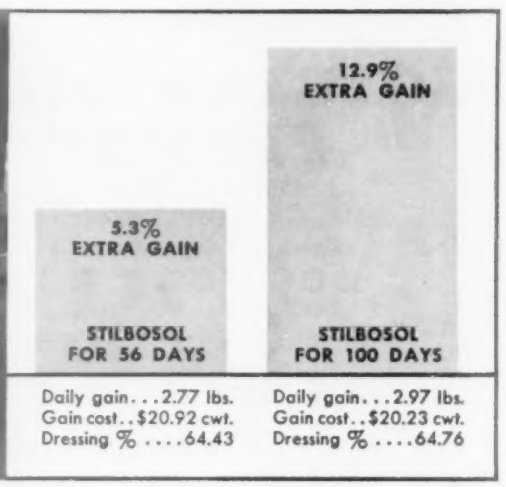
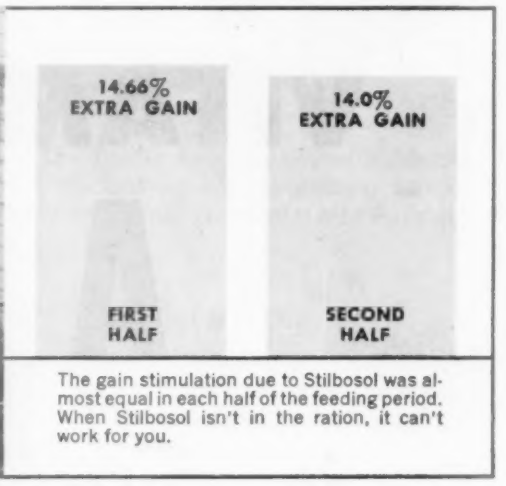
These two studies approached the same question from different directions and proved the same point...Stilbosol belongs in finishing rations all the time. Armed with facts like these from accepted, unbiased sources, your salesmen and dealers should gain more respect and believability from cattle feeders for your total cattle feed and supplement story. (Reprints of these feeding results are available upon request.)

College evidence supports full-time Stilbosol® feeding

Cattle feeding results at Kansas State and Iowa State show how full-time use of Stilbosol boosts gains steadily throughout finishing period.



Kansas State College fed one group of 75 steers a Stilbosol ration for 100 days. A comparable group of 73 steers received the same ration, but Stilbosol was discontinued after 56 days. Extra daily gains averaged 12.9% for the group fed Stilbosol full time. Those cut off Stilbosol after 56 days gained 5.3% more than a control check group which was fed the same ration but without Stilbosol.


14.66%
EXTRA GAIN
FIRST
HALF
14.0%
EXTRA GAIN
SECOND
HALF
The gain stimulation due to Stilbosol was almost equal in each half of the feeding period. When Stilbosol isn't in the ration, it can't work for you.

Iowa State College analyzed six experiments to see what difference there was, if any, in gains made because of Stilbosol during the first half of the feeding period and the second half. Extra daily gains due to Stilbosol were 14.66% in the first half, 14.0% in the second half . . . less than ⅜ of a percent difference.

While these two studies checked the value of full-time Stilbosol feeding from entirely different directions . . . they reached the same basic conclusion. The Iowa State study shows that Stilbosol works for extra gains every day it is fed. The Kansas State test shows that extra gains do not continue if Stilbosol is removed from the ration. Both show that extra gains due to Stilbosol are consistent and steady. Both show that it pays to feed supplements with Stilbosol during the entire finishing period.

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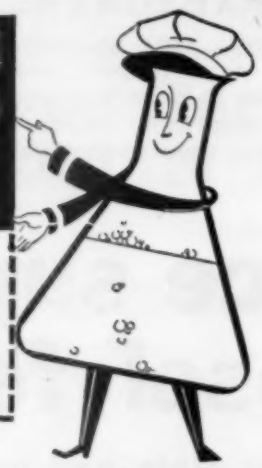

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

Jan. 31 — Connecticut Regional Swine Producers Day; University of Connecticut, Storrs; Donald M. Kinsman, Animal Husbandry Dept.

Feb. 4 — Illinois Feed Nutrition Conference; Illini Union Ballroom, University of Illinois, Urbana; chm., Dr. Harold H. Draper, Animal Science Dept.

Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

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1959

Jan. 5-6 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Dr. Tom Avery, Poultry Department.

Jan. 6-7—Elevator Business Managers Clinic, Michigan State University, Kellogg Center, East Lansing, Mich.; chm., Earl H. Brown.

Jan. 6-8—National Turkey Federation Convention and Exposition; Veterans Auditorium, Des Moines, Iowa; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 11-13—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Fleming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 18-20—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 20—Nevada Feed Conference; University of Nevada, Reno, Nev.

Jan. 20-21—North Dakota Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, North Dakota Poultry Improvement Board, Bismarck, N.D.

Jan. 22-24—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque; sec., Parley Jensen, Box 616, Albuquerque, N.M.

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 27-28—Agricultural Industries Forum; University of Illinois, Urbana; Harold G. Halcrow, Agricultural Economics Department.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Jan. 31—Regional Swine Producers Day; Ratcliffe Hicks Bldg., University of Connecticut, Storrs, Conn.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 11-12 — Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13—Utah Feed Manufacturers & Dealers Assn. Nutrition Conference; Brigham Young University, Provo; sec., Dr. Lawrence Morris, Brigham Young University, Provo, Utah.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Farmers Elevator Association of Minnesota; Hotel Nicollet, Minneapolis, Minn.; sec., Lloyd A. Nelson, Lumber Exchange Bldg., Minneapolis.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

Feb. 26—Illinois State Turkey Growers Assn.; Animal Sciences Laboratory, University of Illinois, Urbana, Ill.; sec., S. F. Ridlen, Poultry Extension Specialist.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nail, 1304 E. 7th St., Los Angeles.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier,

CALENDAR FOR 1958-59

DECEMBER

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1614 20th St. N.W., Washington 9, D.C.

April 8—Purdue Egg Day; Purdue University, Lafayette, Ind.; sec., David D. Jackson, extension poultryman, Purdue University.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 23-25 — Joint Convention, Texas dealer and manufacturer groups; Hotel Texas, Ft. Worth; Texas Grain & Feed Dealers Assn., sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth; Texas Feed Manufacturers Assn., sec., Ben E. Schmitt, 3421 Park Ridge Blvd., Ft. Worth.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Bruce Poundstone, Agricultural Experiment Station, University of Kentucky, Lexington, Ky.

July 10-14 — Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. v. pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A & M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

USDA Revises Sheep, Lamb Grade Standards

WASHINGTON—The U.S. Department of Agriculture has announced an amendment to the official standards for grades of slaughter lambs and sheep.

The revisions correspond to changes made in the standards for grades of lamb, yearling mutton, and mutton carcasses on Feb. 11, 1957. Those changes lowered quality requirements for prime and choice grades, particularly for older lambs, and reduced the range of quality included in the good grade.

Other changes were made to facilitate interpretation and application of the standards.

The revised standards for grades of slaughter lambs and sheep are scheduled to be published in the Dec. 5 Federal Register. They will become effective Jan. 5, 1959.

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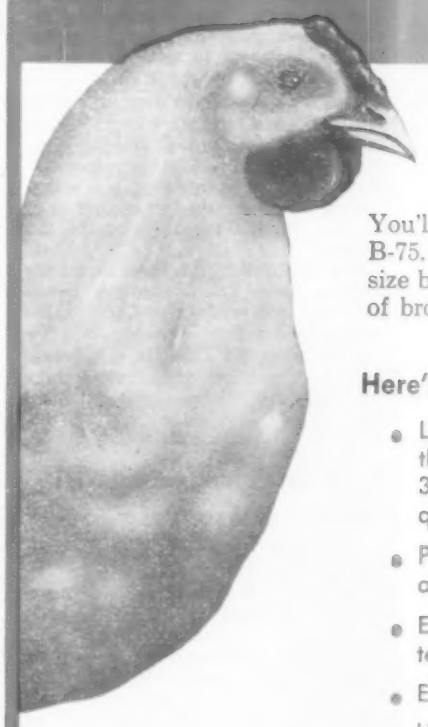

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- Eliminates dust problems by penetrating feed particles.
- Has more digestibility than animal fats . . . will not deteriorate or become rancid.

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Oyster Shell Products Company
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Serving the Feed Trade For Over 20 Years

Speakers Named for Veterinarian Meeting

INDIANAPOLIS—Speakers have been named for the second annual Symposium on Therapeutic Nutrition to be held here Feb. 25 under the sponsorship of the Indiana Veterinary Medical Assn. in cooperation with Vita Vet Laboratories, Marion, Ind.

Among the speakers will be Dr. Damon Catron, animal nutritionist, Iowa State College, Ames; Dr. W. M. Beeson, animal nutritionist, Purdue University, Lafayette, Ind.; Dr. W. M. McMillen, nutritionist, A. E. Staley Manufacturing Co., Decatur, Ill., and other speakers from midwest colleges.

Dr. James Carter, Elkhart, Ind., chairman of the nutrition committee of the Indiana Veterinary Medical Assn., will be in charge of the program. He said feed manufacturers are pleased with a program for therapeutic nutrition because it does not attempt to replace feed bag nutrition nor does it conflict with it. It focuses attention on short time therapy to supplement feeds during periods of disease, exposure and stress conditions, he said.

All practicing veterinarians from the Midwest are invited to attend.

Lilly Releases Swine Erysipelas Vaccine

INDIANAPOLIS, IND. — A new vaccine that gives longer and stronger protection against swine erysipelas and erysipelas arthritis has been released for use, according to an announcement from Eli Lilly & Co., Indianapolis.

"The improved vaccine gives pigs complete immunity against erysipelas for four months, and excellent protection for 6-9 months after vaccination. This fully protects pigs when they are most susceptible to erysipelas—up to market weight," it was stated in the announcement.

"The vaccine is the first known to give protection against crippling arthritis resulting from erysipelas infection. In tests to date, it has reduced arthritis by about 80%.

"Farmers who have seen erysipelas outbreaks are familiar with the swollen joints and stunted, crippled pigs that often result. This crippling accounts for most of the loss which makes swine erysipelas second only to hog cholera in costliness to the farmer."

The new product is sold to veterinarians under the trademark Duragen, and is a product of Corn States Laboratories, Inc., Omaha, Neb., a subsidiary of Eli Lilly. It is a modified live culture of Erysipelothrix rhusiopathiae, the bacterial organism that causes erysipelas.

New Mark Heard Mill Opens in Georgia

CUMMING, GA.—The new Mark Heard Feed Mill opened recently in Cumming with a program and chicken fry attended by more than 400 poultrymen.

The new mill replaces a smaller plant burned in March, 1958, and has been built with modern automatic equipment. Only two men are required to operate it. Ralston Purina products are used.

Equipment is designed to produce bulk and bagged feed both at the rate of 80 tons per eight-hour day. Facilities include storage for 8,400 bu. of grain and storage for 90 tons of concentrates. The mill also has storage capacity for 80 tons of finished bulk feed. About 90% of the feed is taken out in bulk form. Mark Heard, Jr., said he is operating two bulk delivery trucks, and has another ordered.

Ralston Purina officials who participated in the program included Curt Severson and Dorsey Guthrie, both of Atlanta, and Ralph Burt, Canton, Ga.

She was going to have a baby, but she couldn't decide just how to tell him. But when he told her they would celebrate their wedding anniversary any way she wished, she thought she saw her chance.

When he got home from the office she said: "Darling, I bought 3 tickets for the theater."

"Fine," he answered, "but sweetheart, there are only two of us."

"Oh, yes?" she replied. "That's what you think!"

◆ ◆ ◆

Nearly every motorist is in the position of this applicant for a driver's license. He wrote "No" to the question, "Have you ever been arrested?" And then he was momentarily stumped by the question that followed immediately, "Why?" In a moment of truth he wrote down, "I just wasn't caught."

◆ ◆ ◆

A subscriber to Dun & Bradstreet was baffled the other day when he received an envelope from the outfit with nothing in it. He phoned Dun & Bradstreet to ask what they had in mind. "How would we know," said the young lady who answered his call, "if there was nothing in the envelope?"

◆ ◆ ◆

A gentleman quarreled with his wife and moved out to a hotel. All day he brooded, but by dinner time he was hungry and sorry, so he called her.

"Hello, Sarah. What are you making for dinner?"

"Poison I'm making."

"So make only one portion. I'm not coming home."

◆ ◆ ◆

A northern farm hand went to work for a Texas rancher. There had been a long drouth, and every man on the ranch was hoping for rain. One day it started to sprinkle, and the farm hand, to show his delight, began to dance in the rain.

"Hey, you," shouted the ranch owner, "come in out of the rain!"

"Oh, I don't mind it a bit," called back the farm hand.

"That isn't the point," insisted the rancher. "I want every drop of that water to fall on Texas."

BEFORE
they used to call me "runt" until I started on feeds with SUCRO-FLAVOR
TRADEMARK
AFTER
FLAVOR CORPORATION OF AMERICA
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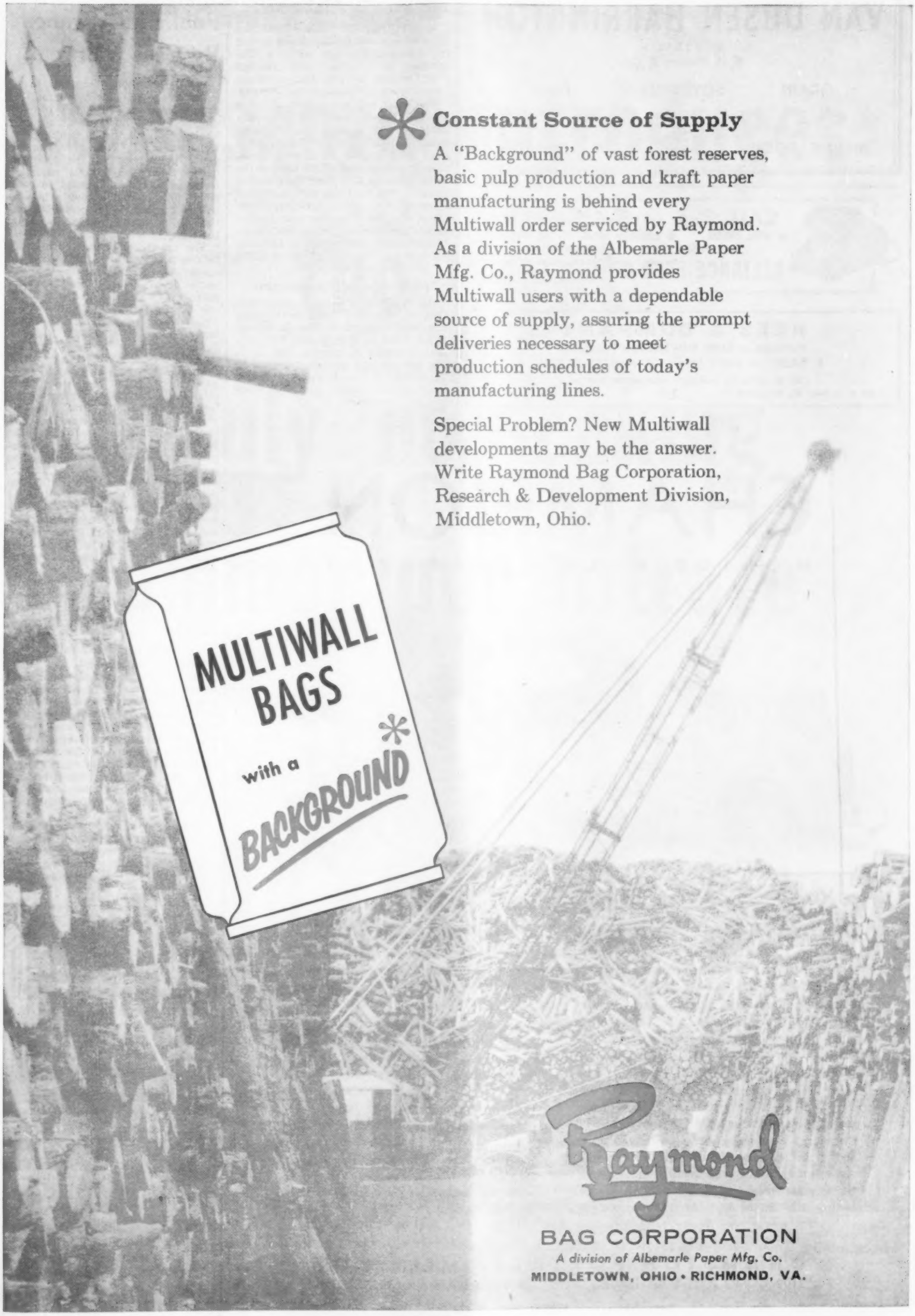

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Special Problem? New Multiwall developments may be the answer. Write Raymond Bag Corporation, Research & Development Division, Middletown, Ohio.

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Feed Tonnage Shows Increase in Alabama

MONTGOMERY, ALA.—Increased sales of hog and poultry feeds during the month of October led to a 12% increase in total Alabama tonnage over October, 1957, the Alabama State Department of Agriculture reports.

The total tonnage sold in October was 102,371.63, compared with 91,205.85 a year earlier. Poultry feeds, totaling 61,687 tons, made up more than half of the total. Hog feeds, though a small part (5,326 tons) of the total, were up 25% over the previous October. Poultry feeds were increased by about 20%. Other categories were about the same as the year earlier except for molasses, which had an increase from 1,689 tons in October, 1957, to a total this October of 2,037.

FEED FIRMS CHARTERED

RICHMOND, VA.—The incorporation of two feed firms in Virginia has been announced. The Broadway (Va.) Feed & Supply Co., Inc., has been granted a charter for malting, milling and manufacturing, and Terry's Feed Mill & Farm Supplies, Inc., Laurel Forks, also has been granted a charter.

Inquiries Made Public in Advance By Census Bureau

WASHINGTON — Inquiries to be made of the nation's manufacturing companies in the 1958 census of manufactures were made public recently by the Bureau of the Census, U.S. Department of Commerce. The advance publication of the types of questions in the various reporting forms is of special interest to company officials and accountants who will be responsible for compiling statistical information needed to supply the answers for their companies.

The census of manufactures will be conducted early in 1959, covering operations of manufacturing companies during calendar year 1958. Report forms will be mailed next January to an estimated 285,000 firms which employed paid personnel during all or part of 1958. The completed forms will be returnable within 30 days after receipt by the respondent companies. Where circumstances make compliance with this time limitation impracticable, however, additional time may be granted in which to return the completed forms to the Census Bureau. No forms will be mailed to companies which had no paid workers in 1958.

Because of the wide variations in manufacturing activity, with more than 450 different industries represented, the census bureau has prepared over 200 report forms for the census of manufactures. The products made and materials used sections of each form are tailored to fit a specific industry or closely related industries. For the very small companies there will be 21 "short" forms—questionnaires containing fewer questions than the "long" forms.

Common Questions

Common to each of the report forms will be such standard inquiries as are applicable to plant identification and location; company affiliation and ownership; employment and payrolls; man-hours of production workers; cost of materials; inventories at beginning and end of year; capital expenditures; electric energy used and fuel consumed; quantity and value of selected materials used; quantity and value of products shipped.

Sample surveys, on a company basis, covering channels of distribution for manufactured products and expenditures for research and development also are being conducted for the year 1958.

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MOBILE MILL EQUIPMENT

Process More Tonnage . . . At Lower Cost Per Ton

LARGER CAPACITY Champion's large, 2- to 3-ton mixing capacity, with fast and accurate grinding action, will process a high tonnage of top-quality feeds at a lower cost per ton than units of smaller volume.

LABOR-SAVING FEATURES More than two tons of bagged concentrates can be hauled on the large platform next to the mixer, thus saving extra truck and man-hour expense. And with Champion's new sheller arrangement, ear corn and grain are conveniently fed by the same feeder which feeds the hammermill unit—saving the expense of an auxiliary feeder. A simple control valve in the feeder-head diverts the ear corn into the sheller or into the mill unit as desired.

DEPENDABLE PERFORMANCE Champions are built to provide dependable, faster and more complete, on-the-farm service—day after day. You're assured more for your money, too, because Champion leadership, with more than 29 years' manufacturing experience, brings you this quality-built unit at the industry's most fair and honest price.

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ST. LOUIS, DECEMBER 1, 1958 —

Monsanto introduces the first truly non-caking ammonium nitrate fertilizer

LION E-2

Now, for the first time since the development of solid prilled ammonium nitrate fertilizer, you and dealers everywhere may offer customers an ammonium nitrate that ends complaints and costly returns due to caking. It's Monsanto's new LION E-2 ammonium nitrate.

Developed and tested under all extremes of storage conditions by Monsanto farm researchers, amazing LION E-2 surpassed all expectations for non-caking, non-powdering performance. There is nothing like it on the market for dependable, trouble-free storage. It means much greater ease in handling for both the dealer and the farmer.

New LION E-2 ammonium nitrate is available this month. It is an exclusive, premium quality ammonium nitrate fertilizer, yet LION E-2 will cost no more than ordinary ammonium nitrate fertilizers.

This combination of premium product performance at ordinary ammonium nitrate prices will make LION E-2 the most wanted ammonium nitrate in America. LION E-2 provides the same sales advantage as offering a high octane, additive-packed gasoline for the price of "regular."

For more information contact Monsanto at once. Write, wire or call:

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ROADSIDE DISPLAY AREA—Marion (Iowa) Feed Center has found that its mass display of hog feeders shown here attracts attention from passing motorists. Located on a highway leading into a larger city, Cedar Rapids, Iowa, owners of the Marion firm said the display has led to sales.

Medium-Sized Firm Outlines Uses for Fork Lift Trucks

By Al P. Nelson
Feedstuffs Special Writer

How a medium-sized feed dealer can lower handling costs is illustrated by the Marion (Iowa) Feed Center, which has found that a fork lift truck is an effiicient tool for general feed handling.

The firm is a retail outlet for its own King Castle Molasses Mineral Feed and it also retails Kent Feeds. There are many small customers who buy from one to five bags at a time. This kind of handling does not call for a fork lift truck.

But a fork lift truck is used to bring a pallet load of bagged feed to a truck on the loading platform for the customer making a big purchase. It is also used to bring bagged feed from a car on a railroad siding into the warehouse and for stacking the feed on pallets right up to the ceiling.

EASIER HANDLING—The Marion (Iowa) Feed Center has found uses for a fork lift truck in its medium-sized retail feed outlet. Here the truck is used for stacking the firm's mineral feed for each loading. It is also handy in the warehouse, where the firm makes its own pallets and piles feed to the ceiling.

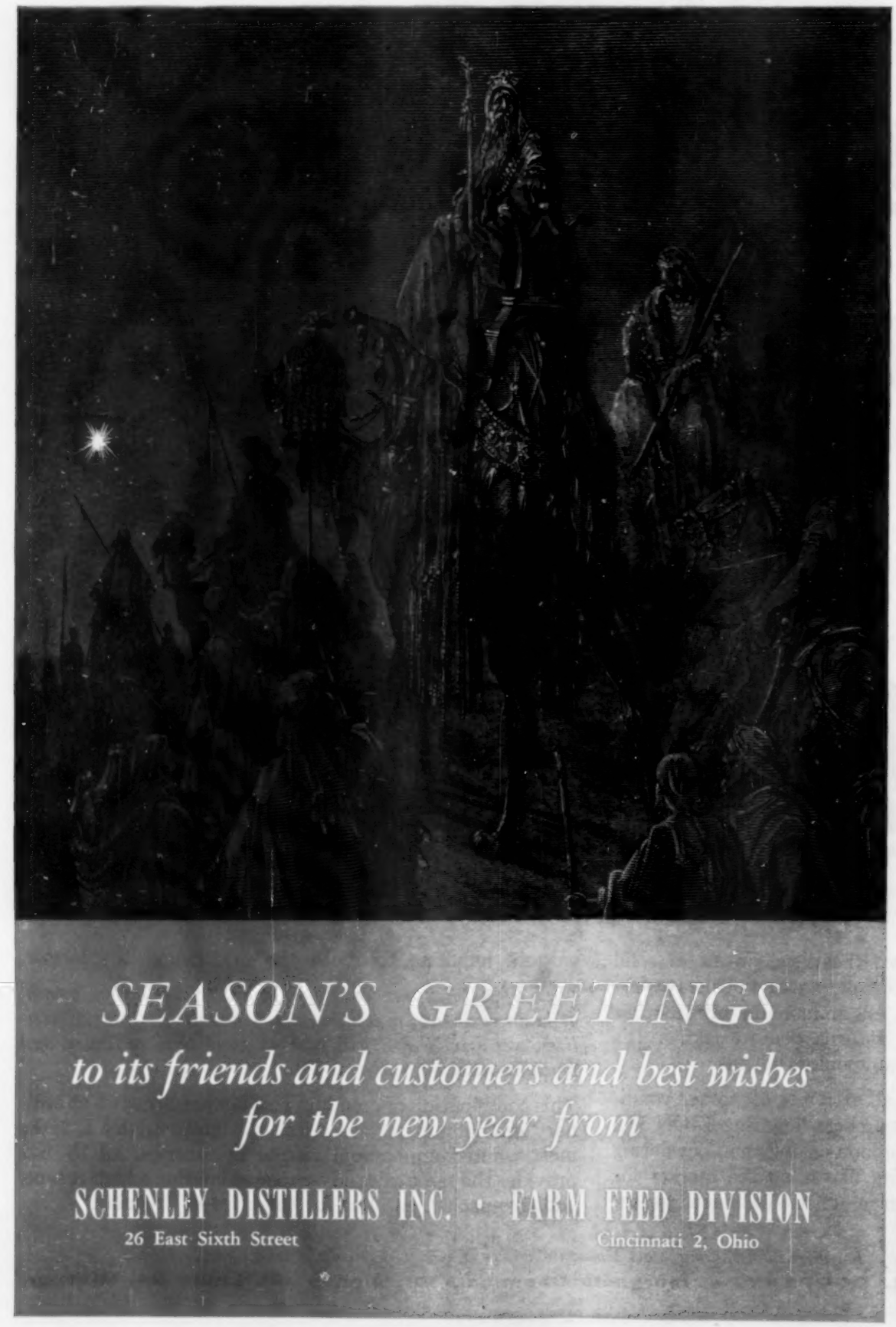
When feed and other supplies do not come in pallet forms in the railroad car, the Marion Feed Center employees stack it on their own pallets and then use the fork lift truck to bring it into the warehouse. Again space is saved by stacking the feed almost to the ceiling.

Often the firm pre-sells a carload or part of a carload of feed. The farmer gets a $2 ton discount if he hauls it himself, plus 2% for cash and another $1 per ton if he takes it out of the car himself.

By using the fork lift, the Marion Feed Center management can unload a car quickly, taking whatever bags out that customers do not haul themselves. This reduces the amount of time the car is parked on the siding.

Marion Feed Center is owned by Clyde Castle, Francis Fornell and Paul Fornell. The firm has six employees. The firm does not grind or mix for customers, but makes mineral feed in a separate building. For mineral feed making the firm has a two-ton Marion mixer, a Richardson scale and sacker and other equipment. For its mineral feed the firm has dealers in Iowa, Minnesota and Nebraska.

The firm makes excellent use of roadside display space to attract attention of customers. A large display of metal hog feeders is kept there most months of the year. Farmers traveling to and from Cedar Rapids, Iowa, see the display and many of them drop in and buy.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Dairy Cows Do Well on High Moisture Corn

EAST LANSING, MICH. — Dairy cows go for and do well on high moisture corn if it is not too wet, according to Dr. Charles Lassiter, dairy scientist at the Michigan Agricultural Experiment Station.

He announced the conclusion on the basis of a year of testing in which he compared dried corn and wet corn containing varying amounts of moisture in the form of ground shelled corn, shelled whole corn and ground ear corn. The high moisture corn was stored in a conventional upright concrete-stave silo and was sealed on top with a sheet of plastic.

In noting results, Dr. Lassiter reported that butterfat production of the cows in the groups stayed about the same. Milk production, however, did vary and cows fed the corn containing the most moisture dropped the most in production, he said.

During the 112-day feeding trial, milk production for the cows on dried corn declined 29% and cows on ground shelled corn which contained 26% moisture went down only 24% in milk production. The group on ground shelled corn containing 40% moisture dropped 46% in milk production and the cows on ground ear corn declined 36% in milk production.

"As of now," Dr. Lassiter said, "it looks like a moisture content of between 25 and 35% appears to be about the best for feeding to dairy cows."

The researcher also checked to see how much of the high moisture corn passed through the cows without being digested. Almost none of the whole shelled corn passed. If passage data holds up under additional testing, he said, it may mean that high-moisture corn won't have to be ground and farmers would be able to pocket the grinding charges.

Cows got the best batches of wet corn in winter and heat of the summer. They ate it without hesitation, he said.

A second test is under way this year. Scientists are checking ear corn put up at the same moisture content and will compare it with shelled corn.

If feeding trials with high moisture corn continue to look good, Dr. J. S. Boyd, agricultural engineer, said he thinks farmers may be on the edge of a new corn-handling era. Corn could be picked earlier which would cut field losses. Storage costs could be slashed and the crop could be handled completely with machines, he said.

STORAGE TANKS ADDED

OMAHA—Work is under way on four steel storage tanks which will double the capacity of the Norris Grain Co. to 1.6 million bushels. A building permit for $178,200 has been issued to the K. C. Millwright Co., Kansas City. Each tank will have a diameter of 70 ft. and stand 55 ft. 6 in. tall.

Mid-South Association Adds New Members

MEMPHIS — The Mid-South Soybean & Grain Shippers Assn. has announced new members of the group.

They are Payne Gin & Elevator Co. of Harrisburg, Ark.; Bogard Grain & Seed Co., Stuttgart, Ark.; B. C. Christopher & Co., Kansas City; Bald Knob (Ark.) Grainery; Hargrave Elevator Co., Rector, Ark.; Mc Gehee (Ark.) Rice & Grain Storage; Boveing Brothers Cotton Co., Poplar Bluff, Ark.; Trailback Plantation, Essex, Mo.; Dyer County Grain Co., Dyersburg, Tenn.; Malden (Mo.) Grain Co.; Black Elevator, Dewitt, Ark.; Lafayette Elevator Co., Lexington, Mo.; Keenan Elevator, Dardanelle, Ark.; Hilliard Grain Co., Ozark, Ark.; Robert Craft & Son, Proctor, Ark.; R. H. Jordan, manager, Public Grain Elevator, New Orleans.

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Do farmers fidget and talk about politics when you're trying to sell feed? Perhaps you need Protamone (thyroprotein) to give your sales story real punch!
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by providing products and service that win and keep customers . . .
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MODEL SM
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- Separate motor-driven fan—all the power of the mill motor goes into grinding.
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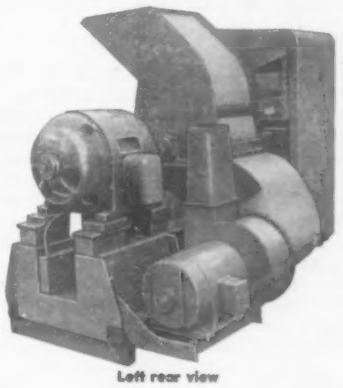
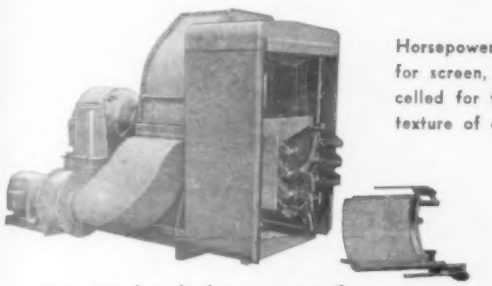

Left rear view


Right rear view, showing screen magazine

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OPENING — ARIZONA GRAIN HOUSEman, 30-35 age bracket. Assistant to general manager. Experienced in grain storage and marketing. Knowledge fertilizer and insecticide business helpful. Co-op background acceptable. Reply Ad No. 4372, Feedstuffs, Minneapolis 40, Minn.

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FEED SUPPLEMENTS SALES REPREsentative. College training and knowledge of nutrition and formulation essential. Travel. Salary and commission plus expenses. Territory, Southeastern states. Contact Feed Supplements Department, Borden Co., 350 Madison Avenue, New York 17, N. Y.

HELP WANTED — PROGRESSIVE AND expanding feed processor desires high caliber salesman or manufacturer's agent to sell our line of feed ingredients to feed mills in Southeast. We would prefer salesman who would be carrying items to sell to the feed mills in addition to ours. Excellent commission basis. Address Ad No. 4372, Feedstuffs, Minneapolis 40, Minn.

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Have five old, four new, and plans to build more mills, need man who will engineer efficient feed production by planning improved and original machinery and equipment layout and supervising installation. Offer satisfying work relationship on staff of production manager who considers, credits and boosts ideas and effective work of associates. Offer development opportunity in steadily growing organization with solidly based security. Starting compensation as attractive as your qualifications and records. H. A. MacCord, Vice President-Production, Cooperative Mills, Inc., 2101 E. Fort Ave., Baltimore, Md.

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WANTED—USED PELLET MILL. ROBnett's Egg Farm, 2507 54th, Lubbock, Texas.

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

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WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jeffreson City, Mo.

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FEED MIXER, 1-TON CAPACITY, guaranteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

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100 H.P. BLUE STREAK HAMMERMILL, direct connected with controls, magnet and collector. Ray L. Jones, Box 326, Benton, Ill.

FOR SALE—1956 DAFFIN MOBILE FEED mill on two-ton Chevrolet. Excellent condition. Priced to sell. Yorktown Grain Corp., Yorktown, Ind.

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36" BAUER BROS. ATTRITION MILL with (2) 50 H.P. motors, complete with controls; 15 H.P. blower unit and collector, good shape. $1,650. Quad States Equipment Co., P.O. Box 2503, South Des Moines 15, Iowa.

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FOR SALE—NEVER USED ERIEZ 20"x32" magnetic pulley; 7,500 lb. Double Ribbon Blender. Best Equipment Co., 1737 W. Howard Street, Chicago 26, Ill.; AMbassador 2-1452.

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MISCELLANEOUS

FEED GRAINS: BARLEY, OATS, CORN, alfalfa meal. Truck shipping only. All truckers and buyers welcome. B. W. Goetz Brokerage, Route 1, Lindsey, Ohio; Phone MO 5-2442.

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Anaplasmosis Vaccine Being Developed

GAINESVILLE, FLA. — A new vaccine to combat anaplasmosis, a cattle disease that has given trouble in Florida for years, is being developed, according to Dr. M. Ristic, animal pathologist with the University of Florida Agricultural Experiment Station.

Dr. Ristic said the vaccine should protect cattle against infection during the most critical summer months if the animals are immunized in early spring before blood-sucking vectors become active.

Animals with the disease may die within three days after the first symptoms are evident. Animals that recover become carriers. When mixed with a clean herd, they usually become centers of infection for spreading the disease.

NEW FEED STORE

JEFFERSON, ORE. — Art Kunke will have a new feed store in business in Jefferson. It will be known as the Jefferson Feed Store and will carry a full line of Nutri-Dine, Thompson and Larro feeds and stock remedies.

USDA Reports New Systemic Insecticide For Cattle Grubs

WASHINGTON—A new systemic insecticide for control of cattle grubs, cause of heavy annual losses to livestock producers, has shown promise and versatility in experimental use by U.S. Department of Agriculture entomologists, USDA reports.

The new chemical is an organophosphorus compound known chemically as (O-(4-tert-butyl-2-chlorophenyl)O-methyl methylphoramidothioate). It can be administered either orally or as a spray.

Used orally, the chemical at the highest test dosages used provided control amounting to 94 to 100%. Used as a spray, it provided 99 to 100% control. The chemical is not yet available to cattlemen.

Test results were reported recently to members of the Entomological Society of America holding their sixth annual meeting at Salt Lake City.

Adolph R. Roth and James W. Eddy, entomologists of USDA's Agricultural Research Service, conducted the tests at Corvallis, Ore., during the 1957-58 grub season. Discussing findings of the test, Mr. Roth said that one previously-tested chemical had proved effective only as an oral treatment while another was effective as a spray. The new chemical, he said, gave excellent results used in either manner.

Experimental treatments, Mr. Roth explained, were most effective when the dosage administered in bolus or capsule forms amounted to 20 to 25 mg. of the new chemical to each kg. (about 2.2 lb.) of body weight of the test animals. Results were fair, however, when oral dosages of only 4 to 15 mg. per kg. of body weight were given.

The researchers obtained nearly perfect control results when 4 qt. of spray were used per animal, but a 2-qt. application provided about 70 to 80% control. The spray formulation included a wettable powder containing 0.75% active material. Sprays were applied under an operating pressure of 250 to 300 lb.

Hereford yearlings weighing 400 to 500 lb. were used in the experiments. They were treated in the fall of 1957 and examined for grubs last February, March, April and May. The grubs, Hypoderma lineatum, normally appear largely in March. Those appearing in April were mainly of the H. boris species.

The test animals were selected at random and ear-tagged. They were not separated from the animals used as controls.

In addition to the Hereford yearlings used in the test, all of which were treated before the grubs appeared, a single grub-infested yearling Guernsey steer was treated orally with the 25-mg. dosage after grubs were visible on the animal's back. The animal was infested with 22 encysted second and third-instar larvae, all of which were dead 14 days after treatment.

Kane to Handle A. E. Staley Feed Advertising

DECATUR, ILL.—A new advertising agency has been appointed to represent the formula feeds division of the A. E. Staley Manufacturing Co., Decatur, announced Lloyd A. Winslow, manager of the division. The agency is Kane Advertising, Bloomington, Ill.

Mr. Winslow said the Kane firm will have full responsibility for promotion of A. E. Staley's complete line of farm feeds, dog and "small animal" feeds, soybean oil and soybean meal. The company's "small animal" feeds are distributed under the "Rockland" label.

Principals from the agency will be John Tully and Rich Hancock, account executives.

Contract Broiler Grower Ruled Not an Employee

WASHINGTON—A farm operator who raises broilers under the usual contract with a feed company is not an employee for federal employment tax purposes, according to a ruling in a recent issue of Internal Revenue Bulletin, publication of the Internal Revenue Department.

The bulletin said advice had been requested from the department on the status of a farm operator who raises chicks to broiler size for a feed company under a certain set of circumstances. The circumstances and the ruling are listed in the bulletin as follows:

A farm operator is primarily engaged in general farming operations. In addition, he raises broilers on his farm pursuant to the terms of a broiler production agreement entered into with a feed company. Under the agreement, the farm operator furnishes two brooder houses equipped with the brooders, feeders, waterers, etc., which have a value of approximately $3,500.

The feed company furnishes the chicks and chicken feed and provides the farm operator with a specified amount each growing period to pay for, or apply against, the cost of the heat and lights used during that period. The feed company also pays the farmer an agreed-upon amount each week for the use of the brooder houses and equipment and for the care of the chicks. If the cost of the utilities necessary for the broiler raising operations exceeds the amount provided by the feed company for that purpose, the excess is paid by the farm operator from his own funds.

Operator Controls Raising

The farm operator manages and controls the broiler raising operations. He performs all services necessary to raise and care for the chicks, and the feed company does not supervise him in the performance of the broiler raising operations.

A representative of the feed company visits the farm from time to time to observe the operations, to note the mortality rate of the chicks, etc. The feed company reserves the right to determine when the broilers are to be sold and to terminate the agreement at any time the farm operator fails to exercise sound management practices.

The agreement covers either four or five growing periods of approximately eight weeks each, the fifth period to be at the option and agreement of both parties. The expenses incurred by the feed company, including the cost of chicks and chicken feed, the amounts provided for the cost of utilities and the weekly payments made to the farm operator are deducted from the amounts received from the sale of the broilers. The balance is divided equally between the feed company and the farm operator.

Under section 3121 (d) (2) of the Federal Insurance Contributions Act, the term "employee" means any individual who, under the usual common law rules applicable in determining the employer-employee relationship, has the status of an employee. Whether an individual is an employee under the usual common law rules depends upon the particular facts in each case. The guides for determining whether, under such rules, an employer-employee relationship exists are found in section 31.3121 (d)-1(c) of the Employment Tax Regulations.

The facts in the instant case indicate that the feed company's sole interest is in the results accomplished by the farm operator and that the company does not exercise or retain the right to exercise such control over the farm operator in the performance of his services as is necessary under the usual common law rules to establish the relationship of employer and employee. Accordingly, liability for the taxes imposed under the Federal Insurance Contributions Act is not incurred by the feed company with respect to the amounts paid to the farm operator pursuant to the terms of the broiler production agreement.

This conclusion is also applicable for purposes of the Federal Unemployment Tax Act and the Collection of Income Tax at Source on Wages. It is held further that the broiler raising operations are not excluded from the term "trade or business" under the Self-Employment Contributions Act of 1954. Accordingly, the farm operator has the status of a self-employed person and the income he derives from the raising of chicks to broiler size should be included in computing his net earnings from self-employment for taxable years ending after 1954.

Named to Poultry Staff

ST. PAUL — Dr. Robert W. Berg has joined the poultry staff of the University of Minnesota Agricultural Extension Service, replacing Miss Cora Cooke who retired last June, according to Skuli Rutford, extension director. Dr. Berg was formerly a geneticist and hatchery manager for the Jerome Turkey Hatchery at Barron, Wis. Before that he served with the Minnesota Poultry Improvement Board, and was an assistant geneticist for a hatchery in Bellevue, Wash., to November, 1953. He holds B.S., M.S. and Ph.D. degrees from the University of Minnesota.

Discussions on Vitamin Chemistry Scheduled For Chicago Meetings

CHICAGO — Discussion topics for the 1959 winter and spring meetings of the Association of Vitamin Chemists were announced recently by the group. The meeting series features addresses by prominent scientists on subjects of current interest in the field of vitamin chemistry.

First speaker in 1959 is Dr. J. F. Mahoney, Merck & Co., who will speak Jan. 8 on "Stability of Vitamins in Supplements and Animal Feeds." All meetings are open to the public. They are held at the Illini Union Building in Chicago at 7:30 p.m. The meetings follow a buffet dinner at 6:15 p.m.

Other speakers scheduled are Dr. George Briggs, National Institutes of Health, Bethesda, Md., "Selenium in Nutrition," Feb. 12; Dr. R. W. Wissler, University of Chicago, "Nutrition, Hormones and Atherosclerosis," March 12; Dr. A. E. Harper, University of Wisconsin, "The Process of Digestion and the Availability of Amino Acids from Foods and Feeds," May 14.

Discussions earlier this fall covered "Vitamin E in Nutrition," "Current Research in Atherosclerosis," and "Tranquilizers in Animal Feeds."

The meetings are only part of the activities of the association. It also publishes Vitamin Abstracts, a collection of abstracts of papers relating to some aspect of vitamins published four times a year, and it has published the book, "Methods of Vitamin Assay." The methods described are a result of the pooling and interchange of information on analytical techniques. A committee makes corrections and revisions, and a third edition including up-to-date corrections and revisions is now in progress.

Subscription cost for the Vitamin Abstracts has been set at $4 annually for members and $6 a year for nonmembers. Abstracting and editorial services are provided by members of the association without cost. The publication was begun by the association in 1947 as an assist for time-pressed nutritionists, officials said. Each issue contains abstracts of papers from some 100 scientific journals.

Membership is open to individuals who have an academic degree in the basic or applied sciences or the equivalent in experience, and two years of experience in the field of vitamin chemistry, technology, nutrition or related fields. Current officers are H. C. Spruth, Abbott Laboratories, president; B. H. Barrows, Hales & Hunter, vice president; H. F. Bernholdt, Swift & Co., secretary, and W. K. Calhoun, American Institute of Baking, treasurer.

Included in the membership are feed nutritionists as well as university and experiment station personnel.

R. J. Rattman Named Salesman for Babcock

ITHACA, N.Y.—Rudy J. Rattman of Middletown, N.Y., has been named sales representative in eastern New York for Babcock Poultry Farm, Inc., according to J. C. Huttar, manager of commercial sales.

Located in Ithaca, the Babcock firm breeds Babcock Bessies and other strain-cross White Leghorns.

Mr. Rattman is an alumnus of New York State Agricultural & Technical Institute Farmingdale, N.Y. For several years he was associated with his father on a poultry and dairy farm in Johnson, N.Y.

He was formerly employed in a sales capacity by Robinson & Cunningham of Middletown.

INSTALLS MOBILE MILL

SYLVESTER, GA.—Worth Milling Co., Sylvester, managed by Harmon Heffords, has installed a new mobile feed processing plant, a Daffin feed mixer and grinder.

Wisconsin Opens First Swine Testing Station

EAST TROY, WIS.—The first Wisconsin swine testing station is now in operation, according to Rex Whitmore, chairman of the swine testing committee of the Wisconsin Swine Breeders Assn. Cooperative.

The station is located near East Troy. Two boars and one barrow from the same litter make up the testing entry for each swine producer. The boars are put on test in one of the 22 pens inside the building.

Rate of gain, feed efficiency and backfat thickness will be checked when the boars weigh 200 lb.

Barrows and gilts are group-fed outside the building. The litter-mate barrow or gilt will be slaughtered for carcass information when it reaches 200 lb. Checked will be back fat, carcass length, loin eye size and per cent of lean cut for the slaughtered animal. This carcass information will then be used in figuring an index for use in evaluating the litter mate boars.

The boar must gain at least 1.6 lb. per day and not require more than 3.4 lb. of feed for each pound of gain. Boars showing more than 1.45 in. backfat at 200 lb. will be removed from the test. Those that meet all requirements will be sold at auction at the end of the test.

4-H'ers Start Dog Project in 20 States

CHICAGO — The 4-H Clubs have launched a dog husbandry project as a pilot program in 20 states.

According to the national 4-H committee, the program was started because of the shift in population from rural areas to suburbs and cities.

The national committee has cooperated with federal and state extension services and the Ralston Purina Co., St. Louis, in developing program plans and literature.

Allen L. Baker, former Pennsylvania 4-H state club leader, has been named field consultant to work on the dog project.

MILL REMODELING PLANNED

ABERDEEN, S. D. — Lanes N-R-G Feeds, Inc., Aberdeen, has announced that it is planning to remodel its mill this winter. The 18-month-old wholesale dealer firm has five employees and operates two trucks.

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FEED CLASS—The formula feed manufacture class in the department of flour and feed milling industries, Kansas State College, uses the IBM-650 for solving problems in least-cost formulation. The students are (front row, left to right): Gary Resseguie, B. Resseguie & Sons, Lockwood, N.Y.; Roger Wolfe, Wolfe Feed Co., Hiawatha, Kansas; Norman Wolfe, Ray-Vitam Products, Waseca, Minn.; Marion Heim, Inman, Kansas; Herman Knoche, Stafford, Kansas, and Ronald C. Young, Beacon Milling Co., Hampton, Conn. Standing are (left to right): Harold Van Horn, Jr., graduate student in dairy husbandry, Pomona, Kansas; Jerry Poley, Zip Feed Mills, Sioux Falls, S.D., and Dr. W. H. Hastings, class instructor.

K-State Class Uses Computer In Formulation

MANHATTAN, KANSAS — Students in the formula feed manufacture class, department of flour and feed milling industries at Kansas State College, are now using an IBM-650 computer to solve problems in least-cost feed formulation.

(As noted by Dr. W. H. Hastings, who teaches the class, the use of linear programming to determine least-cost feed formulas has recently been explained in some detail in a series of Feedstuffs articles by Dr. R. F. Hutton of Pennsylvania State University.)

As part of the instructional material presented in the formula feed manufacture course, students become familiar with the operations of the IBM-650 computer in solving formulation problems.

Dr. Hastings explained that a simplified poultry feed requirement was first set up with a limited number of sources for these requirements, or ingredients, to select in the answer.

Using the hand method of solving linear programming to learn the mechanics of setting data in tableau form, the method is worked out in two laboratory periods of three hours each. The same data is taken to the college computer center where IBM cards are punched to present the information to the 650, and the answer output is obtained in less than five minutes.

Dairy Feed Problem

The class also handled a more complicated dairy feed formulation problem. The problem involved the following requirements: weight, 2,000 lb.; total protein, more than 16%; digestible protein, more than 10%; total digestible nutrients, more than 1,400 lb. per ton; fiber, less than 10%; molasses, at least 5% and no more than 11%; wheat bran, at least 10% and no more than 22%; and soybean oil meal, no less than 5% and no maximum fixed. A fixed amount of minerals was included. Least cost was required in the solution.

Eleven ingredients were available as sources of these requirements. Corn, grain sorghums, oats and beet pulp competed as low-cost sources of total digestible nutrients (TDN). Soybean oil meal, cottonseed meal, peanut meal and brewers grains were offered as protein concentrates.

Based on Kansas City market prices, the formula developed by the computer cost $38.90 per ton with grains ground, and contained 440 lb. wheat bran; 220 lb. molasses; 600 lb. grain sorghums; 374 lb. beet pulp; 306 lb. soybean oil meal and 20 lb. each of limestone, salt and dicalcium phosphate. All requirements were satisfied, with fiber being 7.8%, somewhat less than allowable, and digestible protein being 12%, more than the minimum required.

Instead of bringing a bulk density lower and upper limit into the requirements for solution, it was decided to prepare the ingredients specified in the answer by milling to the desired bulk and texture. Therefore, beet pulp was pelleted and crumblized to standardize appearance and bag size. The cost of milling beet pulp was not justified in terms of the value of wheat middlings, which would have come into the solution if the original cost of beet pulp had been adjusted to the market price plus pelleting.

Referring to the articles by Dr. Hutton and the use of linear programming in general, Dr. Hastings pointed out that sometimes the solution to a problem is surprisingly different from conventional formulas. This, he said, was shown in a USDA report on least-cost broiler feeds, where 10% distillers grains with solubles entered into the final formula, at the same time meeting the requirements of no more than 4% fiber.

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these specialized Dorsey Bulkmasters offer quality features never before possible in units priced so low. Multi-stage auger flighting prevents jamming and a torque limiter stops augers safely when foreign objects impede them. Hanger bearings midway in discharge tubes prevent vibration and "whip."

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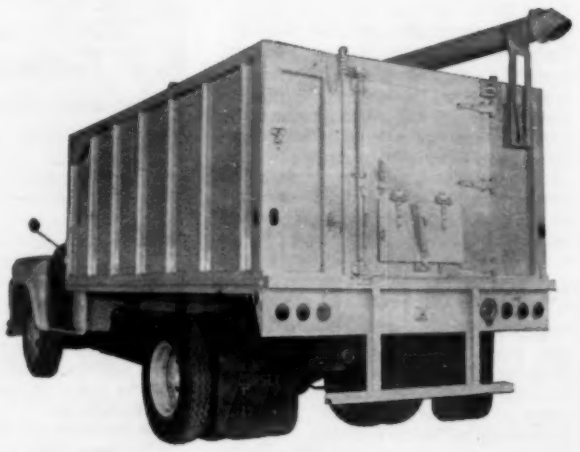
This all-steel, electrically-welded unit has ribbed body and heavy bumper. Payload capacity exceeds that of many costlier bodies. 10 or 12-foot lengths. Sliding hatch covers are 32″ x 32″ with foam rubber seals.



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FEEDSTUFFS

TURKEY

(Continued from page 1)

ra Taft Benson (tentative), secretary of agriculture; Dr. Kenneth Hood, American Farm Bureau Federation, Chicago, Ill., and Dorsey Kirk, The National Grange, Oblong, Ill.

Social events will conclude the first-day program.

Merchandising Methods

On Jan. 7 there will be a special clinic program on merchandising methods, and a business management clinic including "The 1958 Tax Law and How It Will Affect You," by J. Talmadge Jones of Ben A. Roth & Associates, Los Angeles, and "The Revised NTF Group Insurance Plan," by Don Mallen, Nationwide Life Insurance Co., Columbus, Ohio. Two other addresses will be "Do You Need a Profit Sharing Trust Plan?" by Ben A. Roth, president of Ben A. Roth & Associates, and "Changes in the 1958 Social Security Law That Affect Your Business," by Mr. Jones.

Turkey Management

On the same day, under the subject, "Management for Year-round Production," addresses will cover breeding, controlled environment and feed-finishing. Speakers will be Dr. George Jaap, Ohio State University; Stanley Marsden, turkey specialist with the U.S. Department of Agriculture; Dr. Stanley L. Balloun, Iowa State College, and C. N. Thurnbeck, Forest Lake, Minn. The evening of Jan. 7 will be left open.

The exhibitors' night entertainment of past years has been discontinued to provide exhibitors an opportunity to entertan their customers and friends, and for turkey people to visit or entertain themselves as they wish. For this open night many exhibitors are planning special activities for their customers and friends. This year the largest display ever of products and services for the turkey industry is expected, with record number of exhibitors and more floor space used than ever before.

On Jan. 8 Kathryn Niles, director of home economics, Poultry & Egg National Board, will discuss latest information on turkey cookery and nutrition. On the same day Dr. Robert Phillips, head of the poultry department at Iowa State College, will preside over a "Turkey Inspection Clinic." There will be a panel type review to explain and clarify the provisions of the federal poultry inspection program.

Addresses during a "Turkey Disease Clinic" will include: "How to Live With Bluecomb," by Dr. B. S. Pomeroy, University of Minnesota; "Can Sinusitis Be Controlled?" by Dr. A. C. Jerstad, Western Washington Experiment Station; "Field Observations in Turkey Disease Control," by Bernhard Blom, General Mills, Inc., Detroit, and "Talking Turkey," by Dr. W. A. Billings, St. Petersburg, Fla.

A banquet, dancing and entertainment will close the convention.

PRODUCERS

(Continued from page 8)

any other group to get into marketing."

He said modern transportation can get fresh Midwest eggs to New York in less than three days at 4¢ doz. and he stated further that the advantages of good feed and other conditions in Minnesota give this part of the nation the best interior egg quality in the nation.

Also speaking to the group was John Scanlon, poultry branch, division of cooperatives U.S. Department of Agriculture. He pointed out that a cooperative, to be successful, must be well conceived and well carried through.

Essential for a successful cooperative for egg marketing, he said, are good quality, efficiency in local operations, carrying the product as close to the consumer as possible, an efficient plant and a strong organization. He also pointed out that the producer must have a voice in the price setting.

"Iowa and Minnesota have 60% of the nation's egg surplus," he said. "You can set prices here, and, in fact, you do—at the bottom. Your area determines the price for the nation, and a cooperative could do much for you."

Larger Group Suggested

Some areas of the nation which were formerly markets for Iowa and Minnesota eggs are becoming self sufficient, he said, and on this basis he suggested the possibility of even a larger cooperative which would include Minnesota and Iowa.

"With this kind of a group," he said, "the cooperative could afford representation in the big markets and could be an efficient unit."

Other speakers emphasized that egg producers of the area can no longer compete without quality, but it was pointed out that Minnesota now has the program it needs to achieve quality. The state has had a quality egg program under way for about five months. It is open to egg producers and produce firms.

Farmers under the program can be certified as quality egg producers following a program of management which will assure quality eggs marketed with enough frequency to make them attractive to egg-deficient markets, the speakers said.

NEPPCO

(Continued from page 8)

manent and formal basis the National Poultry Producers Federation.

"3. That effort be made to create other regional groups stemming from state organizations, similar to Neppco and Southeastern, which in turn could be a part of the national federation. The federation could work with the Institute of American Poultry Industries, American Feed Manufacturers Assn. and other such organizations toward solution of poultry industry problems, and toward ever-increasing concentration of all poultry promotion efforts in the hands of the Poultry & Egg National Board.

"4. That this effort be started just as soon as possible in order to have national effort in being during the current session of Congress."

In discussion of the issue, Neppco directors noted that loyalty of an individual producer for his own commodity creates a feeling that any organization devotes more money and effort to commodities other than those of his primary interest, and that because of this loyalty, it is felt by some that money is more easily raised for a specific commodity.

The Neppco board members, however, said the arguments were inadequate when compared with the advantages of a well coordinated program, with the welfare of the whole poultry industry in mind. Their reasons are as follows:

"1. Organization costs to a large extent are composed of office functions, salaries and expenses of employed personnel, and fund raising. Most problems of one group are similar to problems of other poultry groups and can be handled efficiently together, with resulting substantial savings in time of industry volunteers and paid personnel.

"2. Increased effectiveness of one strong voice in speaking for the $4 billion industry in matters of vital legislative concern would be invaluable.

"3. Many substantial supporters of poultry organizations have interests in more than one segment of the industry, and the trend seems to be gaining in that direction.

"4. Whereas conflicts may exist between commodities at certain levels, by-and-large existing state and regional organizations represent across-the-board interests. None of the problems or conflicts are such that they cannot be resolved within one organization, which can be departmentalized to meet specific conditions.

"5. Existing regional organizations have demonstrated the sound principle and the success of all industry segments and commodity interests working together. Industry experience in the matter of vital legislation has proven the value of a united front. This same principle seems to hold true in promotional organizations. Media regularly using consumer information releases are now confused by receiving releases that occasionally conflict from separate poultry promotion organizations. They resolve this confusion by publishing releases from competitive food products."

Lower Profit Margins

Lower margins of profits in all phases of the poultry industry serve to emphasize the need for maximum efficiency in utilization of the dollars made available for industry organizations, the study committee noted. It was unanimously agreed that the division of the poultry industry into commodity groups is unsound. These splinter groups and their competitive tactics are injurious to the welfare of the poultry producer, it was said.

The study committee, having reached this conclusion, noted the following, according to the Poultryman:

"1. If a National Egg Council were established without the support of the regional groups such as Neppco, it would tend to bypass these groups and reduce their effectiveness.

"2. If a National Egg Council were established with the support of the regional groups, with those groups forming the nucleus of the council, it would produce a situation where the national effort of the regional groups would be directed strictly to eggs, with little national trade effort for other commodities.

"3. If a national trade effort were made for broilers, then again, as in the above two instances, the regional group is bypassed and ineffective."

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
October 11	1,087	499	584	727	156	570	1,576	1,690
October 18	1,110	378	633	713	116	495	1,445	1,643
October 25	1,056	419	589	646	96	557	1,686	1,566
November 1	1,033	416	768	707	127	535	1,813	1,570
November 8	1,094	470	814	795	180	655	1,293	1,927
November 15	1,099	382	825	797	173	654	1,293	1,871
November 22	1,075	560	818	797	174	676	1,580	1,746
November 29	1,015	584	857	861	127	736	1,605	1,551
December 6	1,042	522	856	870	143	656	1,645	1,653
December 13	1,125	567	953	943	163	696	1,598	1,743

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
October 11	1,039	478	2,398	344	4,942	151	2,525	1,639
October 18	932	446	2,352	362	5,002	182	2,355	1,637
October 25	834	485	2,229	315	5,034	180	2,285	1,613
November 1	894	571	2,307	297	5,121	213	2,496	1,668
November 8	796	611	2,416	327	5,095	185	2,654	1,654
November 15	878	574	2,294	364	5,016	201	2,648	1,727
November 22	941	468	2,359	369	5,196	192	2,685	1,796
November 29	1,008	481	2,444	381	5,320	245	2,650	1,830
December 6	1,006	506	2,439	347	5,388	249	2,628	1,903
December 13	988	490	2,475	342	5,255	237	2,773	1,972

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1958	Total 22 areas 1957
October 11	2,416	404	2,165	272	149	770	26,584	24,237
October 18	2,374	423	2,126	209	141	761	25,838	23,930
October 25	2,475	411	1,963	281	118	773	25,611	23,413
November 1	2,465	357	2,143	298	140	819	26,758	23,058
November 8	2,308	367	2,158	236	161	836	27,032	24,205
November 15	2,463	394	2,269	273	164	812	27,171	24,456
November 22	2,550	383	2,321	289	168	861	28,004	24,601
November 29	2,723	446	2,302	270	138	779	28,353	24,462
December 6	2,921	457	2,165	308	219	955	28,878	24,828
December 13	2,999	506	2,211	259	254	878	29,427	25,320

Sheriff Attachment Closes Oregon Mill

PORTLAND, ORE. — Scott-Palitzsch Feed Mills, Inc., wholesale feed manufacturer at Portland, has been closed by a sheriff's attachment. Two creditors filed attachments, one of $1,800 and the other of $8,100.

Assets and liabilities are reported to be about equal, with the value of the accounts receivable unknown at this time.

The firm had been in business for many years but had changed ownership several times.

Salt Company Faces Anti-Trust Charges

WASHINGTON — The Federal Trade Commission has charged the Diamond Crystal Salt Co., St. Clair, Mich., with tending to lessen competition and create a monopoly by its purchase of Jefferson Island Salt Co., Louisville, in January, 1957.

A hearing has been set for Feb. 24 in Detroit on the commission's complaint of a violation of the Clayton Anti-Trust Act.

Charles F. Moore, chairman and president of Diamond Crystal Salt, said, "It is preposterous that a company as small as ours in an industry dominated by larger competitors could be in any position to create a monopoly. We are a David fighting Goliaths, yet the Federal Trade Commission would take away our slingshot." He indicated that the charges took the company completely by surprise.

"When we acquired Jefferson Island, we did not acquire a competitor because its products and its sales territories were basically different from ours," he said.

Jefferson Island Salt Co. was founded 38 years ago. It became the largest salt producer in the South, with mines and plant at Jefferson Island, La. Heirs of the three owner-families sold the company, reportedly to diversify their investments.

"Before the acquisition," said Mr. Moore, "Diamond Crystal produced only evaporated salt—salt evaporated from brine pumped from underground—which went mostly to food industries, plus a small portion tonnage-wise for table salt and for livestock and poultry feeding . . . It had become increasingly clear that if we were to improve our position against our larger competitors in the dry salt market, we would have to diversify our line and offer rock salt."

Also, he said, territories of the two firms were largely different.

"Even after our acquisition of Jefferson Island," he said, "we stand a poor fourth in size in the salt industry in this country and third in the sale of rock salt in the nine southern states cited by FTC."

Mr. Moore said Diamond Crystal accounts for about 10% each of the nation's evaporated and rock salt market.

NEW ALABAMA COOPERATIVE

GERALDINE, ALA. — The Geraldine area will soon have a new cooperative service agency, according to J. Julian Baker, director of distribution for Cotton Producers Assn. To be known as the Farmers Mutual Exchange, the Geraldine cooperative will supply Cooperative Mills feed, plant food, seed, insecticides and miscellaneous farm supplies plus marketing operations.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Denver: Demand fair; trend steady; supply good; 2,250 A, 300 D 22¢ lb., Denver.

New York: Demand fair; trend steady; supply limited; price per lb. in 55 gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½ @15½¢, 1,500 A 15½@17¢, 2,250 A 17½@ 20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

Boston: Demand fair; supply good; 600 D, 1,500 A 17½¢ lb.; 600 D, 3,000 A 18¢; 300 D, 3,000 A 19½¢; 300 D, 2,250 A 19¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14½¢; 75 D, 750 A 14½¢.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

ALFALFA MEAL

Ft. Worth: Demand good; supply sufficient; 17% protein dehydrated $60, truck; Kansas dehydrated, 17%, 100,000 A $62.50, rail; suncured 13%, No. 1 ¼-in. grind $39, truck or rail, immediate.

Kansas City: Demand good, with blender interest added to that of feed manufacturers; trend steady; supply adequate; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival; reground pellets $54, sacked; oiled meal $56, sacked; pellets $49, bulk; 18% protein and 125,000 units A meal $58, sacked; non-guaranteed A meal $46, nominally, sacked; suncured alfalfa meal is unchanged with demand slow and supplies adequate, No. 1 fine ground $33@33.50, No. 1 ¼-in. $31.50, No. 2 ¼-in. $29.50, sacked.

Portland: Demand good; supply ample; trend unchanged to higher; 15% suncured $41; dehydrated $68.

Philadelphia: Demand and supply fair; 17% dehydrated $63.50.

New Orleans: Demand fair; trend steady; supply ample; 17% $65@66; pellets $57 @59.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $64.

Omaha: Demand good; supply adequate; 17% dehydrated, 100,000 A units, bulk pellets $49; sacked meal $54, Omaha basis.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $44, delivered, truck loads; 136,000 A unit dehydrated $69, delivered, truck loads.

Denver: Demand good; trend firm; supply ample; dehydrated $48, Denver.

Minneapolis: Steady trend; good demand; ample supply; 17% dehydrated, 100,000 units vitamin A reground pellets $53.50; oiled reground $55.50.

Buffalo: Demand poor; trend steady; supply ample; $65.50, Boston.

Memphis: Demand fair; trend higher; supply scarce; dehydrated, 16% protein, guaranteed 100,000 units vitamin A $64.

St. Louis: Demand slow; trend steady; supply ample; 13% fine suncured $39.50; 17% dehydrated, 100,000 A $59.

Boston: Demand good; supply fair; dehydrated, 17% $64; suncured, 12% $48.

Los Angeles: Demand fair; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $49; dehydrated pellet meal, 17% protein, 100,000 A $52; suncured crumbles, 15% protein $43@44; suncured meal $41@42.

Chicago: Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $58.50@59; 13% No. 1 fine ground $48@49.

ANIMAL FAT (STABILIZED)

Ft. Worth: Demand light; supply sufficient; prime tallow, tank cars 7½¢ lb.; drums 9¢ lb., f.o.b. north Texas packing plants with returnable drums.

Kansas City: Demand slow from feed buyers; trend steady; supply adequate; prime bleachable fancy tallow 7¼¢ lb., tank car.

San Francisco: Demand fair; supply ample; bleachable fancy 8¢ lb.; yellow grease 7¼¢ lb.

Louisville: Demand slow; trend weak; supply good; bleachable white 7¾¢ lb.; white tallow 8¢ lb.; yellow grease 6¾¢ lb.

New Orleans: Demand fair; trend steady; supply adequate; 7½@8¢ lb., tank cars.

Atlanta: Demand normal; trend steady; supply ample; 7¼¢ lb.

Boston: Demand and supply steady; $152.50, f.o.b. shipping point.

Chicago: Demand and supply fair; bleachable fancy tallow, tank truck or carlots 7¾@7¾¢ lb.; yellow grease 7@7¼¢ lb.

St. Paul: Renewed soaper and consumer interest has boosted price for bleachable fancy tallow to 7½¢ lb., f.o.b. producer's plant.

BARLEY FEED

Ogden: Supply normal; rolled $51@56; whole barley $43@48.

Portland: Demand good; supply ample; trend unchanged; rolled $64, ground $62.

Philadelphia: Demand and supply fair; pulverized $47.50.

San Francisco: Demand fair; supply ample; rolled $63.50; ground $62.50.

Seattle: Demand good; trend steady; supply fair; $53 bulk, delivered, truck lots.

Milwaukee: Demand good; supply fair; needles 95¢@$1.05 cwt.; ground screenings $25, Milwaukee.

New Orleans: Demand slow; trend unchanged; supply light; $60@61.

Los Angeles: Demand fair; trend steady; supply adequate; standard rolled $3.28 cwt., standard ground $3.28 cwt.

Chicago: Demand excellent; supply tight; $39.

Baltimore: Demand excellent; supply tight; $49.50.

Boston: Demand and supply fair; pulverized $49.50.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Denver: Demand fair; trend good; supply ample; $21, Denver.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 20-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply good; $95@100.

BLOOD MEAL

Ogden: Supply normal; $110 in 100-lb. bags, f.o.b. Ogden.

Portland: Demand slow; supply ample; trend unchanged; $105.

New Orleans: Demand fair; trend unchanged; supply light; $110@115.

Louisville: Demand fair; trend steady; supply ample; $95@100.

San Francisco: Demand good; supply tight; $7 a unit of ammonia.

Chicago: Demand and supply fair; $125 @140, guaranteed 80% protein.

Los Angeles: Demand fair; trend steady; supply adequate; $7.50 a unit of ammonia.

BONE MEAL (STEAMED)

Portland: Demand slow; supply ample; trend unchanged; $100.

Ft. Worth: Demand fair; supply light; $85, f.o.b. Ft Worth, local manufactures.

Seattle: Demand steady; trend firm; supply good; $87, ex-dock, truck lots.

Louisville: Demand dull; trend steady; supply light; $90@95.

San Francisco: Demand good; supply fair; $72.50.

Denver: Demand good; trend strong; supply tight; $77.50, Bay Shore, Cal.

New Orleans: Demand slow; trend steady; supply normal; $85@90.

Cincinnati: Demand good; trend strong; supply short; $110, Cincinnati.

Chicago: Demand good; supply fair; $85@90.

Los Angeles: Demand fair; trend steady; supply adequate; imported $73.50, in 20-ton lots.

Buffalo: Demand good; trend steady; supply ample; $90.

Atlanta: Demand fair; trend steady; supply poor; imported $65, ex-ship Mobile.

Boston: Demand steady; supply fair; $90.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply moderate; $56.90, December.

Philadelphia: Demand fair; supply light; trend unsettled; $65.

San Francisco: Demand fair; supply ample; $54.

Louisville: Demand very good; supply fair; trend steady; good southern movement; $52.

Cincinnati: Demand poor; trend higher; supply adequate; $60.

Milwaukee: Demand good; supply fair; $53.

New Orleans: Demand fair; trend steady; supply normal; $53.50@54.50.

Chicago: Demand fair; supply tight; 26% $52@52.50.

Los Angeles: Demand and trend steady; supply adequate; $49.50 bulk, $53.50 sacked.

St. Louis: Demand good; trend higher; supply ample; $50.

Buffalo: Demand good; trend higher; supply fair; $58, bulk, Boston.

Boston: Demand active; supply short; 26% $63.50; 22%, none offered.

BREWERS DRIED YEAST

Portland: Demand good; supply steady; trend unchanged; 8½¢ lb.

Omaha: 10½¢ lb.

Louisville: Demand fair; trend steady; supply ample; 10@10½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Chicago: Demand good; supply limited; 10@11¾¢ lb. in carlots; 10¼@12½¢ lb., l.c.l.

Boston: Demand and supply steady; 10¢ lb.

Buffalo: Demand good; trend steady; supply ample; $10.70 cwt.

Los Angeles: Demand steady; trend unchanged; supply adequate; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

BUTTERMILK-CONDENSED

Ogden: Supply average; $4.40, 100-lb. drum.

Philadelphia: Demand slow; supply light; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Louisville: Demand dull; trend steady; supply normal; $4.25 cwt.

Wichita: Demand slow; supply sufficient; $2.90 cwt. in barrels.

New Orleans: Demand slow; trend steady; supply normal; $4.25@4.30 cwt.

Chicago: Demand light; supply adequate; $3.25@3.50 cwt. in carlots.

Los Angeles: Demand fair; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

Boston: Demand slow; supply light; 3½¢ lb.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.63, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $3@9 cwt.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Chicago: Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $5.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Los Angeles: Demand slow; trend unchanged; supply ample; $10.25.

CHARCOAL

San Francisco: Demand steady; supply ample; $141.

Chicago: Demand quiet; supply adequate; poultry charcoal $110 in 50-lb. multiwalls.

Los Angeles: Demand slow; trend unchanged; supply ample; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

Boston: Demand limited; supply light; $100.

COCONUT OIL MEAL

San Francisco: Demand good; supply tight; solvent $82.50, expeller $90.

Seattle: Demand fair; trend strong; none available; $90, ex-dock, Seattle (Philippine production).

Los Angeles: Demand fair; trend steady; supply limited; copra cake $85@87 bulk.

COD LIVER OIL (FORTIFIED)

New York: Demand limited; trend steady; supply fair; price per lb. in 55 gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@ 15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½ @19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 600 D, 1,500 A 18¢; 300 D, 3,000 A 20½¢; 300 D, 1,500 A 17¢; 300 D, 2,250 A 18½¢.

CONDENSED FISH SOLUBLES

New York: Demand fair; supply good; trend steady; 5¢ lb., f.o.b. eastern shore.

Denver: Demand fair; trend steady; supply ample; dried $187.40, f.o.b. Denver.

New Orleans: Demand light; supply limited; trend steady; 50% solid $95@98, f.o.b. Gulf.

Los Angeles: Demand steady; trend unchanged; supply limited; 5¢ lb.

Boston: Demand active; supply scarce; 5¢ lb., nominal.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $57.80, meal $89.80.
Atlanta: Feed $63.98, meal $95.98.
Birmingham: Feed $62.64, meal $94.64.
Boston: Feed $62.84, meal $94.84.
Chicago: Feed $51, meal $83.
Cleveland: Feed $59.14, meal $91.14.
Denver: Feed $61.51, meal $93.51.
Ft. Worth: Feed $59.96, meal $91.96.
Indianapolis: Feed $56.36, meal $88.36.
Kansas City: Feed $51, meal $83.
Louisville: Feed $58.21, meal $90.21.
New Orleans: Feed $61.20, meal $93.20.
New York: Feed $62.43, meal $94.43.
Norfolk: Feed $61.71, meal $93.71.
Philadelphia: Feed $62.02, meal $94.02.
Pittsburgh: Feed $59.96, meal $91.96.
St. Louis: Feed $51, meal $83.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $57.

Louisville: Demand slow; trend strong; supply light; $58.45, up $4.

COTTONSEED OIL MEAL

San Francisco: Demand good; supply tight; 41% solvent $69.70; 44% solvent $72.70.

Louisville: Demand fair; trend strong; supply good; old process $74, new process $73, both up $3.

Wichita: Demand good; supply sufficient; 41% old process $73.

Cincinnati: Demand poor; trend higher; supply fair; $76.

Omaha: Demand excellent; supply very tight; 41% solvent $78, bulk, delivered Omaha.

Seattle: Demand good; trend firm; supply limited; $78, delivered truck lots, 41% expeller process.

Denver: Demand good; trend strong; supply very tight; $71, nominal, f.o.b. Denver.

New Orleans: Demand fair; trend steady; supply average; $75.50@76.

Portland: Demand good; trend higher; supply ample; $71.

Ogden: Supply normal; 41% $66@71.

Philadelphia: Demand slow; supply light; trend unsettled; $82.

Ft. Worth: Demand excellent for meal, slow for hulls; limited offerings; carlots, 41% old process $70, prompt; pellets $2 additional; cottonseed hulls $18.

Kansas City: Demand good; trend steady; supply tight; old process meal $69.50, Memphis; solvent meal quoted nominally at $69, Memphis, with offerings very limited.

Chicago: Demand good; supply tight; hydraulic $68; solvent $67.50, basis Memphis.

Memphis: Demand good; trend firm; supply tight; prime 41% protein, old process $69.50; new process, 41% solvent $69.

Atlanta: Demand good; trend strong; supply very limited; 41% $71, Atlanta, sacked.

St. Louis: Demand good; trend higher; supply limited; solvent $76.

Buffalo: Demand and supply fair; trend higher; $87, Boston.

Los Angeles: Demand steady; trend firmer; supply limited; $63, bulk.

Boston: Demand good; supply adequate; $84@85.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

New York: Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb.; 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $53.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

DICALCIUM PHOSPHATE

Portland: Demand good; supply ample; trend unchanged; $115.

Denver: Demand good; trend firm; supply ample; $96.

Cincinnati: 18½% phosphorus $92@93.

DISTILLERS DRIED GRAINS

Philadelphia: Demand dull; trend unsettled; supply light; $63.

Cincinnati: Demand poor; trend steady; supply adequate; $62.

Seattle: Demand good; trend firm; none available; $67, delivered, truck lots.

Louisville: Demand and trend strong; supply light; bourbon grains: light $52@56, dark $54@58, solubles, steady at $77.
San Francisco: Demand fair; supply ample; solubles $85.
Buffalo: Demand fair; trend higher; supply poor; $59.50, bulk, Boston.
Boston: Demand active; supply short; dark $65; light, none offered.

DRIED BEET PULP

Ogden: Supply average; $40@44.
Portland: Demand slow; supply ample; trend unchanged; $52.
Ft. Worth: Demand fair; supply sufficient; carlots, 50-lb. papers, December, plain or molasses $53.33, January $56.33.
San Francisco: Demand good; supply fair; $51.50.
Milwaukee: Demand good; supply fair; plain $50, molasses $50.
Seattle: Demand good; trend firm; supply fair; $47, delivered, carlots.
New Orleans: Demand fair; trend steady; supply ample; $60@61.
Buffalo: Demand and supply fair; trend steady; $56, Boston.
Los Angeles: Demand good; trend firmer; supply adequate; molasses $47.10@52.50, bulk.
Atlanta: Demand fair; trend steady; supply ample; $62.25, Atlanta.
Boston: Demand steady; supply adequate; $55.50@56.

DRIED BUTTERMILK

Ogden: Supply normal; $7.25, 100-lb. bag.
New Orleans: Demand slow; supply ample; trend steady; $11@11.50 cwt.
San Francisco: Demand fair; supply ample; 11¢ lb.
Louisville: Demand slow; trend steady; supply normal; 11½@12¢ lb.
Chicago: Demand fair; none offered; medium acid, nominally $11@11.25 cwt.; sweet cream $11.25@11.50 cwt. in carlots.
Buffalo: Demand good; trend steady; supply limited; $11.85 cwt.
Los Angeles: Demand fair; trend unchanged; supply adequate; 11⅝¢ lb.

DRIED CITRUS PULP

San Francisco: Demand and supply fair; meal $54.
New Orleans: Demand fair; trend steady; supply ample; $52.50@56, f.o.b. Florida.
Los Angeles: Demand good; trend steady; supply limited; orange pulp $43, bulk; lemon pulp $41, bulk.
Atlanta: Demand good; trend weak; supply ample; $37.50@40, f.o.b. Florida points; meal $37.50.
Buffalo: Too scarce to quote.
Boston: Demand and supply fair; spot $57.50; f.o.b. Florida points $38.

DRIED SKIM MILK

Ogden: Supply average; $15.15, 100-lb. drum.
Philadelphia: Demand slow; supply light; $12.50.
Portland: Demand good; supply ample; trend unchanged; $13 cwt.
San Francisco: Demand and supply fair; 13½¢ lb.
Louisville: Demand dull; trend steady; supply normal; 11½@12¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; 10¾@10¾¢ lb.
Milwaukee: Demand and supply fair; $11 cwt.
New Orleans: Demand slow; supply ample; trend steady; $11.50@12 cwt.
Chicago: Demand good; supply light; $10.50@10.75 cwt. in carlots.
Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.
Los Angeles: Demand fair; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
Boston: Demand steady; supply light; 12¢ lb.

DRIED WHEY

Ogden: Supply normal; $6.90, 100-lb. bag.
Portland: Demand good; supply ample; trend unchanged; $7 cwt.
Philadelphia: Demand slow; supply light; $6.25 cwt.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6, December, Ft. Worth; $6.25, December, ton lots, f.o.b. warehouse, Ft. Worth.
Kansas City: Demand fair; trend steady; supply light; $5.50, producers' plants, for regular or partially delactosed.
San Francisco: Demand steady; supply good; $5.50 cwt.
Louisville: Demand fair; trend steady; supply normal; 6@6½¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.
Seattle: Demand steady; trend firm; supply good; $6.40 cwt., ex-warehouse, l.c.l.
New Orleans: Demand fair; trend unchanged; supply adequate; $6@6.50 cwt.
Los Angeles: Demand slow; trend unchanged; supply adequate; $6.16 cwt. in carloads; $6.40 cwt. in l.c.l.
Chicago: Demand fair; supply adequate; $5.50, f.o.b. plant.
Minneapolis: Demand and supply fair; $5.50 cwt., f.o.b. producer's point for both regular and partially delactosed.
Boston: Demand steady; supply plentiful; 5½¢ lb., f.o.b. shipping point.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand fair; supply moderate; 85 to 87% protein $95, f.o.b. trucks, north Texas plants.
Atlanta: Demand good; trend strong; supply limited; $98, f.o.b. plants.
Los Angeles: Demand slow; trend unchanged; supply ample; $1.25 a unit of protein.
Boston: Demand good; supply tight; $85, nominal, f.o.b. shipping point.

FISH MEAL

Ft. Worth: Demand good; supply limited; 60% Angola $163, f.o.b. Houston, prompt.
Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $151@153.
Portland: Demand fair; supply ample; trend unchanged; $2.25, f.o.b. Vancouver.
Minneapolis: Strong demand; adequate supplies; price for 60% meal up to $175 for truck loads.
San Francisco: Demand good; supply tight; imported $2.42½ a unit of protein.
Cincinnati: Demand fair; trend steady; supply adequate; $164.
Milwaukee: Demand and supply fair; 60% $160.
Seattle: Demand fair; trend steady; supply good; $2.33 a unit protein, delivered truck lots (Canadian production).
Denver: Demand good; trend strong; supply very tight; $2.35 a unit of protein, f.o.b. West Coast.
New Orleans: Demand light; supply limited; trend steady; menhaden 60% $155@160; scrap $139@143, f.o.b. Gulf.
Chicago: Demand good; supply tight; eastern menhaden fish meal, 60% protein $160@165; Gulf, no offerings; western blended, 60% protein, no offerings; Northwest herring-salmon blend, no offerings; Canadian herring, 73% protein $2.20@2.25 a unit of protein, subject to production.
Los Angeles: Demand good; trend firm; supply tight; local production, 60% protein $2.35 a unit.
Atlanta: Demand good; trend strong; supply limited; imported $161, ex-ship Mobile.
Buffalo: Demand good; trend steady; supply limited; 60% protein menhaden $150, bulk, nominal; $185, sacked, nominal.
Boston: Demand very active; supply scarce; domestic, none offered; imported $160.

HAY

Ogden: Supply normal; $1 bale; $18 in the barn.
Portland: Demand good; supply limited; trend firm; $32.
Philadelphia: Demand slow; supply light; $32@35.
Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.
Louisville: Demand very dull; trend steady to weak; supply good; No. 1 hay, any variety $25; No. 2 hay, any variety $23; all straw $25; strong demand for straw and low grade hay from road construction companies.
Wichita: Demand poor; supply ample; prairie $5@10, alfalfa $10@12.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $34; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.
Seattle: Demand and supply fair; trend firm; alfalfa, U.S. No. 2 green $32, delivered, truck lots.
Denver: Demand poor; trend slow; supply ample; alfalfa, baled $24, first and second cutting, delivered in Denver.
Los Angeles: Slow demand except for top grades; U.S. No. 1 $32@34; U.S. No. 2 leafy $29@31; U.S. No. 2 green $27@29; U.S. No. 2 $24@26.
Boston: Demand and supply seasonally steady; No. 2 timothy $40@42; No. 2 red clover $43@45.

HOMINY FEED

Kansas City: Demand slow; trend steady; supply adequate; yellow or white $39@40, bulk, with $3.50 more for sacks.
Seattle: Demand fair; trend firmer; supply good; $54, carlots.
New Orleans: Demand fair; trend steady; supply adequate; $50@50.50.
Louisville: Demand slow; trend strong; supply normal; $51.
Cincinnati: Demand fair; trend steady to higher; supply adequate; $50.50.
Milwaukee: Demand good; supply tight; $48.50, nominal, March only.
Chicago: Demand good; supply tight; $48@48.50.
Memphis: Demand nil; trend steady; supply ample; white $51.50, yellow $51.50.
Buffalo: Demand good; trend higher; supply fair; $55, bulk, Boston.
St. Louis: Demand slow; trend steady; supply adequate; yellow $49.
Boston: Demand steady; supply adequate; immediate shipment $54.50; January shipment $53.

LINSEED OIL MEAL

Kansas City: Demand good; trend steady; supply very tight; solvent meal $73, bulk, Minneapolis; old process meal $75.
Ft. Worth: Demand fair; offerings extremely light; most mills sold up through January; carlots, 34% solvent: first half January $96, truck $93 January; pellets $2.50 premium.
Philadelphia: Demand fair; trend unsettled; supply light; 34% $87.
Portland: Demand good; trend higher; supply limited; $79.
Minneapolis: Good demand for very tight supplies; only forward sales being made but at only $2 under the spot price of $73.50 for solvent, first half January $71.50; expeller $72@73 for January.
San Francisco: Demand fair; supply ample; $70.
Louisville: Demand slow; trend strong; supply light; old process $88.40, up $3; new process $85.90.
Wichita: Demand slow; supply ample; 34% $74.50.
Cincinnati: Demand poor; trend steady; supply fair; new process $83; old process $85.
Omaha: Demand good; supply very tight; 34% solvent $77.80, bulk; 32% old process $81.80, Omaha basis.
Milwaukee: Demand good; supply fair; old process $85.50, new process $82.50, both nominal.
Seattle: Demand fair; trend firm; supply good; $82, 34% protein, carloads.
Denver: Demand good; trend strong; supply very tight; $85.50, nominal, Denver.
New Orleans: Demand good; trend steady; supply good; $74@74.50.
Chicago: Demand good; supply scarce; solvent, nominally $74@74.50; expeller $79, basis Minneapolis.
Los Angeles: Demand fair; trend steady; supply limited; local production, 29% protein, January $65, bulk.
Boston: Demand and supply light; solvent $87.

MALT SPROUTS

New Orleans: Demand fair; trend steady; supply limited; $45.50@47.
Milwaukee: Demand good; supply fair; odd weights $42.50, even weights $44.50.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $48.
Boston: Demand and supply limited; $42.50.
Chicago: Demand fair; supply adequate; No. 1 $43@43.50.

MEAT AND BONE SCRAPS

Ogden: Supply average; $97.50 in 100-lb. bags.
Portland: Demand improved; trend higher; supply ample; $1.60 a unit.
Ft. Worth: Demand good; production light; meat and bone, 50% $102@105, f.o.b. or delivered Ft. Worth.
Kansas City: Demand fairly good; trend steady; supply adequate; 50% meat and bone scraps $107.50@112.50, sacked.
St. Paul: Demand and supply fair but price moved upward in sympathy with other proteins and as a result of a lack of raw materials; 50% meat and bone meal $110@114.
New York: Demand good; trend stronger; supply tight; 50% $95, 55% $105, bulk; 50% $98, 55% $108, sacked.
New Orleans: Demand good; trend steady; supply adequate; $95.50@98.
Denver: Demand good; trend firm; supply short; 50% $99.50, small lots; $97.50, truck lots.
Seattle: Demand and supply good; trend steady; $80, ex-warehouse, 50% protein.
Omaha: $105.
Wichita: Demand strong; supply insufficient; 50% $105, f.o.b. plant; 55%, no quotations, no offerings.
Louisville: Demand fair; trend steady; supply good; $95@100.
San Francisco: Demand good; supply ample; $1.80 a unit of protein.
Cincinnati: Demand excellent; trend strong; supply short; 50% meat and bone scraps $110.
Chicago: Demand fair; supply adequate; 50% protein $105@107.50.
Buffalo: Demand very good; trend steady; supply ample; 50% meat scraps $100 bulk, $105 sacked.
St. Louis: Demand good; trend higher; supply short; $113.
Los Angeles: Demand fair; trend steady; supply ample; 50% protein $1.80 a unit.
Boston: Demand and supply steady; $1.50 a protein unit; converted, 50% $87.50.

MILLFEED

Minneapolis: Fair demand for very tight supplies; price moved up slightly and is discounted $2 for January. Not much forward buying; spot price $50 for standard bran and $50.50@51.50 for standard midds., red dog $54.
Kansas City: Demand excellent; trend steady; supply light, especially for sacked feeds; bran $46.25@47, shorts $46@46.75, sacked; bran $42@42.75, shorts $45.50@46.25, middlings $45.50@46.25, bulk.
Wichita: Demand good; supply adequate; basis Kansas City: bran $45.75@46.50, shorts $45.25@45.75; bran advanced $2.75@3 and shorts $2, compared with the preceding week.
Omaha: Demand good; supply tight; sacked bran $47; sacked gray shorts $50; bulk standard midds. $49, all Omaha basis.
Ft. Worth: Demand excellent; light offerings, especially immediate; carlots, burlaps, prompt, bran $55.50, gray shorts $55.50; bulk middlings $54.50, delivered Texas common points; $2.50@3 higher on bran and shorts and $1 higher on middlings compared with previous week.
Chicago: Millfeeds made slight gains or held firm during the week ending Dec. 17. A steady demand kept prices at or near record high levels attained in the last few years. Some feed manufacturers are thought to be building inventories against the next two short production weeks for flour mills. Quotations: bran $53.50@55, standard midds. $54.50@55.50, flour midds. $54@55, red dog $56@57.
St. Louis: Demand good; trend higher; supply short; bran $51.75@52.25, shorts $51.50@52, sacked; bran $47.50@48, shorts $50.50@52, middlings $50.50@51, bulk.
Cincinnati: Demand fair; trend higher; supply adequate; bran and middlings $58.50.
New York: Demand fair; trend lower; supply good; bran $60@60.50, standard midds. $60.50@61.
Boston: Demand very active; supply spotty; bran and middlings $61.
Buffalo: Millfeeds continued strong and very tight last week. It was strictly a bran market again, with bran's strength tending to keep middlings and red dog at a premium. Buying was for spot only, with nothing beyond nearby. Buffalo's levels showed a bigger price rise during the week than western centers, with the greater rise resulting from some hesitancy here during the previous week. Competition from

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

Canada and Ohio appeared but it developed that there wasn't enough of it to erode price levels and the market resumed its advance. Both sacked bran and middlings ended the week $3.50 higher. Red dog was unchanged to $2.50 higher. Bran $58.50@59, standard midds. $59@59.50, red dog $59@62; the bulk differential on both bran and middlings held unchanged at $5.50.

Philadelphia: Demand and supply fair; trend unsettled; bran $61, standard midds. $63, red dog $65.

New Orleans: Demand fair; trend steady; supply adequate; bran $57.50@58.25, shorts $57@57.75.

Memphis: Demand fair; trend higher; supply scarce; wheat bran $44.50, gray shorts $44.50, standard midds. $44.50.

Louisville: Demand fair; trend strong; supply normal; bran $57, mixed feed $57.25, shorts $58, middlings $60.30, all up about $2.

Denver: Demand good; trend strong; supply limited; shorts $46.75, bran $46.75, mill run $46.75.

Seattle: Demand good; trend strong; supply fair; $44, common transit points.

Portland: Demand good; trend higher; supply limited; $39.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $41, middlings $46; to Denver: red bran and mill run $48, middlings $53; to California: red bran and mill run $48.50, middlings $53.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Standard mill run $50, demand fair, trend firmer, supply adequate; red bran $59@61, demand slow, trend firmer, tight supply.

San Francisco: Demand good; supply tight; millfeed $52.50, red bran $62.50.

MINERAL FEED

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $38, phosphorus 2% $78 (all in 50-lb. paper bags).

Ogden: Supply average; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

Portland: Demand slow; supply ample; trend unchanged; $45.

Denver: Demand good; trend steady; supply ample; $155.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Ft. Worth: Demand good; supply sufficient; blackstrap 12½¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $28.07 ton, seller's market price on date of shipment.

Kansas City: Demand slow; trend steady; supply adequate; 12¼@12½¢ gal., tank car, New Orleans.

Minneapolis: Not much change in demand or supply but improved tone is noted; 12½¢ gal., New Orleans.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

Denver: Demand fair; trend steady; supply ample; 12½¢ gal., New Orleans; $21.37 ton.

Seattle: Demand fair; trend easy; supply good; $23, f.o.b. Seattle, tank car lots or truck lots.

San Francisco: Demand and supply good; $23, f.o.b. cars, Richmond, Cal.

St. Louis: Demand improving; trend steady; supply ample; 12½¢ gal., New Orleans.

Memphis: Demand poor; trend higher; supply adequate; blackstrap 12½¢ gal., tank car, f.o.b. New Orleans, and $28.50 ton, delivered truck, Memphis.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

Atlanta: Demand good; trend steady; supply limited; citrus $20@22, f.o.b. Florida.

Los Angeles: Demand good; trend steady; supply adequate; $23 bulk, f.o.b. tank cars; $23.25 bulk, f.o.b. tank trucks.

Boston: Demand good; supply plentiful; 17½¢ gal. in tank cars.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1 kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Portland: Demand good; trend higher; supply ample; rolled $63, ground $60, cleaned $63.

Philadelphia: Demand slow; supply fair; pulverized white $54; Canadian oat feed $35.50, domestic $30.

Minneapolis: Demand holds steady for ample supplies; no price change; feeding rolled oats $79, pulverized $45.50, oat feed $20, crimped oats $56, feeding oatmeal $69.50.

Seattle: Demand and supply fair; trend strong; $53, bulk, delivered, truck lots.

Louisville: Demand fair; trend stronger; supply normal; reground $27.80, up $1; rolled $34.30, steady; feeding $78.30, steady; pulverized $52.30, up 50¢; crimped $67.30, up 50¢.

Chicago: Demand fair; supply scarce; reground oat feed $21@21.50; fine ground feeding oatmeal $70; feeding rolled oats $79@80.

Los Angeles: Demand fair; trend steady; supply adequate; pulverized, local production $64.

Boston: Demand and supply steady; white pulverized $55@56; reground oat feed $22.

OYSTER SHELL

Portland: Demand slow; trend unchanged; supply ample; western $34, eastern $38.50, granite grits $26, shell flour $24.

New Orleans: Demand good; trend steady; supply plentiful; $19@19.50.

Seattle: Demand and trend steady; supply good; eastern $35, carlots.

Cincinnati: Demand fair; trend steady; supply adequate; $23.45.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Louisville: Demand good; trend steady; supply normal; in 80-lb. paper $22.35; in 50-lb. paper $23.10; in 25-lb. paper $25.35.

Los Angeles: Demand fair; trend steady; supply ample; $14.80.

Boston: Demand and supply steady; $25 in paper.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $42.

Atlanta: Demand good; trend strong; supply very limited; 45% $61.50, f.o.b. South Georgia mills.

PEAT MOSS

Philadelphia: Demand slow; supply very light; $2.90 bale, f.o.b. pier.

Portland: Demand slow; supply ample; trend unchanged; $3.25 bale.

Seattle: Demand poor; trend easy; supply good; $2.70 bale, truck lots.

San Francisco: Demand fair; supply ample; $3.65 bale.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41.

Chicago: Demand fair; supply short; $3.60 @3.70, standard 7½ cu. ft. bale.

Los Angeles: Demand slow; trend unchanged; supply ample; Canadian, 6.1 cu. ft. bales $3.75.

Boston: Demand and supply steady; $3.15 bale in carlots.

POTASSIUM IODIDE, U.S.P.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

POULTRY BY-PRODUCTS

Ft. Worth: Demand fair; supply moderate; 55% protein $100, f.o.b. north Texas plants.

Los Angeles: Demand slow; trend unchanged; supply ample; $1.60 a unit of protein.

Boston: Demand active; supply tight; $100, nominal.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good for export, slow for domestic at present price; offerings light; carlots, rice bran $42@43, nominal, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

San Francisco: Demand good; supply fair; bran $45; polished $54.

Los Angeles: Demand fair; trend firmer; supply very scarce; bran, California production, high fat content $53.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $33, bulk.

Ft. Worth: Demand almost nil; supply sufficient; ground $28.

Buffalo: Demand and supply fair; trend steady to higher; ground $36, New York; unground, bulk $30.25, New York.

Minneapolis: Strong trend as lack of supplies continues; price up $2; lights $10@20, mediums $21@30, heavies $31@40; Canadian bulk $25; Canadian ground $35; flaxseed screenings $36; oil type flaxseed screenings $43, basis 15%.

Chicago: Demand fair; supply adequate; ground grain screenings $34; Canadian, bulk $29.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand good; supply sufficient; carlots, bulk, No. 2 yellow milo $2.26@2.28, delivered Texas common points.

Los Angeles: Demand steady; trend firmer; supply adequate; milo $2.47½ cwt., bulk.

SOYBEAN OIL MEAL

Denver: Demand poor; trend steady; supply fair; $79.50, nominal.

Seattle: Demand fair; trend strong; supply ample; $95, carlots.

Omaha: Demand good; supply tight; 44% $73.90, bulk, delivered Omaha.

Cincinnati: Demand fair; trend strong; supply adequate; $60, bulk, Decatur.

Wichita: Demand good; supply adequate; 44% $75, 50% $83, f.o.b. Wichita.

Louisville: Demand fair; trend very strong; supply normal; $72.70, up $4.

San Francisco: Demand good; supply tight; $93.50.

Ft. Worth: Demand good; supply sufficient; carlots, 44% $79@81.50, December-January, depending on origin; truck meal 44% $73@74, prompt.

Kansas City: Demand good; trend steady with lower prices quoted for forward shipments; supply very tight for nearby; meal for Kansas City and western shipment $63, bulk, Decatur, for spot shipment; $58.50 for first half January; unrestricted meal is on same basis as Kansas City for spot and $59 for first half January.

Philadelphia: Demand and supply fair; trend unsettled; 44% $59.50, bulk, Decatur.

Ogden: Supply normal; $81@86.

Portland: Demand good; limited offerings; trend higher; $59, f.o.b. Decatur.

Minneapolis: Tight supply situation; very good demand; December sold out; 44% meal for Minnesota shipment $60 bulk, Decatur, up $1; $56 for January; 50% $70, bulk, Decatur.

Los Angeles: Demand fair; trend firmer; supply adequate; $89.50@90.50, bulk.

St. Louis: Demand fair; trend higher; supply limited; 44% $73.

Memphis: Demand good; trend firm; supply tight; prime 44% solvent $68, f.o.b. Memphis.

Atlanta: Demand fair; trend strong; supply ample; 44% $72, Atlanta, sacked.

Boston: Demand good; supply fair; 44% $58, 50% $65, both bulk, f.o.b. Decatur.

Chicago: Feed manufacturers continue to need great amounts of soybean oil meal and their steady demand helped inch prices higher during the week ending Dec. 17. Supplies for December are scarce and a fair trade in January meal at only $2@3 discount is reported. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $60@61; eastern restricted $59@59.50; 50% bulk, unrestricted, basis Decatur $67.50@68.50; eastern restricted $65.50@66.

TANKAGE

Louisville: Demand fair to good; trend strong; supply normal; $105@110, up $5.

New Orleans: Demand fair; trend steady; supply ample; $114@115.

Omaha: $110.

Cincinnati: Demand excellent; trend strong; supply scarce; 60% digester $112.50.

Wichita: Demand strong; supply insufficient; 60% $110, f.o.b. plant.

Ft. Worth: Demand fair; supply extremely scarce; 60% digester $108@110, f.o.b. Ft. Worth.

Kansas City: Demand fairly good, but slower than it has been; trend steady; supply fairly tight; 60% digester $110@115.

St. Paul: Demand and supply fair; price moved upward with other proteins; 60% digester $109@113.

St. Louis: Demand good; trend higher; supply short; $120.

Chicago: Demand fair; supply ample; 60% protein $107.50@110.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 7¼¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55, freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

New Orleans: Demand and supply fair; trend unchanged; $103@106.

Chicago: Weak trend as demand falls off; price still relatively high for time of the year at $82.

Buffalo: Demand and supply fair; trend steady; commercial grade $76, f.o.b. Buffalo.

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GRAIN

(Continued from page 1)

for market of about 150 million bushels, which is estimated at about three times the amount available at the close of 1957 crop year on June 30, 1958.

A more accurate index of bearish influence can be found, however, in the saggy export outlook where international negotiations have not responded as rapidly as had been hoped, meaning that a piling up of Public Law 480 authorizations perhaps may not be moved by the close of the 1958 crop year. An example is the awaited procurement authorization to Yugoslavia of about 900,000 tons of wheat, which would mean a regular monthly movement of about 42 million bushels of wheat through a period of January-June 1959.

Wheat for Feed

A weak wheat market can have little less than a bearish influence on all grain markets. It has been disclosed here this week that a National Wheat League organization—well financed and politically cohesive in the Great Plains states — is vigorously pressing for a multi-price plan which would make available large quantities of wheat for animal feeding. At a trade group meeting here this week a representative of the House Agriculture Committee told the session to expect legislation on wheat along the lines recommended by the National Wheat League.

There is good reason to believe that this representative of the House committee possibly may have been painting a design which the committee majority would prefer to occur rather than what the probable results will be.

Huge Supplies

But wheat has established itself as a newcomer in the bear market outlook for all grains. Nothing need be added now to a bearish aspect for all grains in the face of the huge supplies. The final crop report for 1959 only confirmed the hideous pile-up of feed grains—with major emphasis on a close-to-4-billion-bushel corn crop, the result of highly favorable weather conditions with an increase in yield per acre of 4.6 bushels over the previous year.

This item of higher yields causes this reporter to draw back from his recent estimate based on grower indications that the 1959 corn crop—weather permitting—would be approximately 4.5 billion bushels.

Government officials have noted this estimate and express doubt that the 4.5-billion-bushel level for corn can be reached, saying that all the favorable aspects of the 1958 crop year will have to be attained and that there will have to be a substantial increase in the corn acreage to make the 4.5-billion-bushel estimate come true.

Attraction to Corn

The government criticism is valid particularly in view of the great advance in acreage yield performance for the 1958 corn crop. Nevertheless, this reporter believes that corn will be the most attractive crop in the feed grain field for 1959 since it must be expected that USDA will lower the levels of support for the other feed grains and soybeans for the 1959 crops.

Since the majority of corn acreage in 1959 will be price supported at a higher level of support than in 1958 crop year—an advance running from 9 to 14¢ bu. for as much as 85% of the acreage—there is the obvious incentive to grow more corn in 1959, particularly in the old non-commercial corn area where there will be for 1959 a price support level of probably 14¢ bu. over the 1958 crop year.

Another factor leading to the probability that—again weather permitting—there will be a record-breaking 1959 corn crop is the withdrawal of the acreage reserve phase of the Soil Bank as an exhaust valve for corn planting and a serious revision of governmental and trade estimates at the cotton acreage decision which cotton farmers will make under the new cotton amendment.

More Corn in Cotton Belt

At first USDA officials and trade and grower sources forecast that cotton producers would lean to the "B" plan of the new law. This permits growers to exceed an acreage allotment of about 16.4 million acres by 40% and obtain a price support level of 65% of parity. The "A" plan under the new cotton law would provide that those farmers who held within their allotted portion of the 16.4 million acres would get a price support level of approximately 80% of parity.

The earlier USDA judgment was that 70% of the cotton acreage—the large, more efficient cotton farms—would accept the "B" plan and that the small two-bale farms would buy the "A" plan.

Now there is a complete upset in these conclusions, not only within USDA but within the cotton industry. It is now observed that perhaps less than 40% of the cotton acreage will accept the "B" plan—the acreage expansion plan—meaning that acceptance of the tight 16.4 million acreage control base will bring expansion of corn production or soybean production in the Cotton Belt this coming crop year.

It has been inferred that local bankers who are lenders on the cotton crop are informing their customers that they want a total put to the government of price supported crops at a level which will protect their loan commitments. In short this means that they are telling their cotton loan customers and other farm customers that they will have to conform to the government high loan levels and acreage allotments and plan other crops on the non-acreage allotment land to bring them out to a protective, stop-loss basis for the bank loans.

One point which has never been too clearly emphasized is that many big lending institutions are probably the greatest advocates of the rigid high price support programs.

However, the pressures of the loan situation do not erase the presence of the huge pile-up of all commodities.

Lower Price on CCC Grain

Here is the masterpiece—unless Congress in an unexpected and surprise action bolts from its Democratic leadership, the re-sale price of government corn next year, despite the higher level of support, will be less than that which now prevails.

Taking a long look at the feed grain situation, one can only contemplate the mountain-high stockpile of CCC feed grains as potentially moving into the market at the lower levels of support which now seem certain when CCC makes its decision on levels of price support—a decision which is its administrative initiative —and contemplates breaking price of feed grains down to the approximate level of the USDA re-sale statutory price by next October.

In the case of wheat, the best information here is that the National Wheat League, entering its case before the Benson administration, has failed to get to first base. The league starts with a domestic parity plan and winds up with nothing less than a four-price system. It emphasizes the development of wheat for animal feeding. This may be sensible in the Pacific Northwest, but it does not make more than fragmentary sense in other deficit areas where they have learned to grow corn and soybeans with the alternative incentive of export markets.

It is no less than a nice kettle of fish.

One may only reflect that there is now on hand more grains than we can consume or export even under the bountiful Public Law 480 programs.

POULTRY

(Continued from page 1)

son. The resulting trend toward uniformity of egg production has reduced the seasonal variation in prices and the need for egg storage operations.

TURKEYS: A record turkey crop is expected in 1959. Current estimates indicate an increase of 5-8%. This quantity would move to market at prices below 1958 levels. Producers will realize lower net returns in 1959 even though feed and other production costs may be slightly lower.

About 3% more turkeys could be marketed in 1959 at about 1958 prices because of the increase in population and expected improvement in consumer incomes. If the expected 5-8% increase in turkeys raised materializes, September-December prices in 1959 will probably be 1-2¢ below the 23.5¢ average of 1958.

Several factors point to an expansion of production. Returns from the 1958 crop, particularly from birds sold early, were above 1957. The number of available breeder hens will be greater. Current hatching operations, though relatively small, are running about double year-ago levels. In addition, the trend toward larger commercial enterprises, often operating in joint arrangements with hatcheries, feed suppliers and processors, tends to generate expansion.

The 1958-59 hatching season has started out with a big hatch but may weaken relative to a year ago as the season progresses. This would be in sharp contrast to the 1957-58 season, which began slowly but ended with a very large late hatch.

Turkey prices during the first half of 1959 will average below 1958. Storage stocks will be near record levels. Slaughter from the late 1958 hatch will be up substantially. Also, pork prices will be lower.

BROILERS: U.S. farm prices for broilers for January-March will probably average 16¢. This is 4-5¢ below 1958 prices for these months. Assuming no repetition of the abnormal mortality of 1958, marketings for the quarter will be increased substantially more than the 15% indicated by placements,

April-June prices are likely to average near 17¢, 3¢ below year-earlier levels. Egg settings and chick placements in early December were running 15-20% above 1957 levels. It is likely that placements will continue substantially above year-ago levels at least until late March. Thus, marketings through May will be correspondingly larger than in 1958.

Unusual broiler mortality and relatively high red meat prices are believed to have given a 2¢ lb. boost to early 1958 broiler prices. Factors contributing to the high broiler mortality are unlikely to be repeated and supplies of red meats will be 4% larger during early 1959.

Breeder hens now available indicate abundant broiler chick supplies during the first half of 1959. Substantially reduced chick and hatching egg prices, compared to the same period in 1958, may increase the rate of liquidation of hatchery supply flocks by mid-summer.

Committee Members

The economists responsible for the report are: Dr. S. K. Christensen, Oregon State College; Dr. William R. Henry, North Carolina State College; Dr. R. L. Kohls, Purdue University, and Dr. Henry Larzelere, Michigan State University. Economists from industry and the U.S. Department of Agriculture serve ex-officio in an advisory capacity.

The organization of the poultry committee was spearheaded by the American Feed Manufacturers Assn. and co-sponsored by the American Poultry & Hatchery Federation, National Broiler Council, National Turkey Federation and Poultry & Egg National Board.

PENB

(Continued from page 1)

industry to unify their support of PENB as the consumer information agency serving eggs and poultry meat throughout the nation. "This is absolutely necessary," he said, "as we move into a period when heavy supplies of these products will be marketed. Therefore, as a matter of self-interest, even survival," he declared, "we should take full advantage of PENB's strategically located offices, excellently equipped test kitchen, professional staff, thousands of loyal consumer information outlets, and nearly 20 years of know-how to stimulate increased consumption of eggs and poultry meat."

"It is no secret to the industry," said Mr. Thompson, "that PENB needs money—much more than it has been getting—to do an effective job of helping the industry to increase demand for eggs and poultry products. This financial stimulant is urgent," he continued. "When added to the more than $3 million invested since 1940, it will give tremendous impact to PENB's consumer information program in the future."

In a policy statement, the PENB announced that it recognizes and respects:

1. The rights of the poultry industry to expect one over-all consumer information agency unifying, coordinating, and speaking for all phases of eggs and poultry meat.

2. The right of the investors to insist that money from egg interests be spent on egg promotion, money from broiler interests be spent on broiler promotion, money from turkey interests be spent on turkey promotion, money from duck interests be spent on duck promotion, and money from goose interests be spent on goose promotion.

Peavey Contracts To Distribute Building

MINNEAPOLIS — A franchise to distribute steel Wonder buildings has been contracted by Peavey Building Service, R. W. Kemerer, vice president and general manager of the organization, has announced. The structures, manufactured by the Wonder Building Corporation of America, Chicago, will be sold under the brand name of "Peavey Wonder Buildings" in parts of Minnesota, Wisconsin, Iowa and South Dakota, Mr. Kemerer said.

Pre-engineered, the buildings can be erected to any length and clear span widths up to 240 ft. They are composed of self-supporting panels entirely free of braces, posts, rafters and other framework, Mr. Kemerer said. To date they have been used for grain storage, aircraft hangars, commercial, industrial and warehousing needs, as well as institutional and recreational purposes, he explained.

The building is described as being simple and economical to erect with only a concrete slab necessary for a foundation. The panels are easily assembled on the ground and securely fastened together with identically-sized nuts and bolts, which are weather sealed with neophrane washers, Mr. Kemerer said, adding that insulation can be applied for temperature and humidity control if required.

NEW HONEGGER DEALERS

FAIRBURY, ILL. — Honeggers' & Co., Inc., Fairbury, has named 13 dealers who will handle the complete line of products manufactured by the Illinois firm. The line includes livestock and poultry feeds, Honegger layers and farm buildings and equipment. Included in the list of dealers are four from Nebraska, three from Missouri, two from Illinois and one from each of the states of Michigan, Indiana, Ohio and South Dakota.

KANSAS

(Continued from page 6)

M. Ward, "Acceptability of Sorghum Grains in Livestock Feeding."

There also will be talks by Dr. James A. McCain, Kansas State College president; Dr. Arthur D. Weber, dean of agriculture, and C. Peairs Wilson, director of the school of agriculture.

Panel Discussions

Two panel discussions, one on contract feeding, the other on feed additives, are featured this year. Rod Turnbull, Kansas City farm paper editor, will moderate the panel on contract feeding. Participants will include: Ralph Bonewitz, Kansas State extension dairy specialist; William House, Cedar Vale cattle feeder; Maurice Johnson, Staley Milling Co., Kansas City; Wilbur Levering, Topeka, Kansas, radio farm director; Arnold Rose, Cawker City swine producer, and Dr. Thayer.

Those on the additive panel are: Dr. Merle Hanson, Dr. Richardson and Dr. Sanford, all from the Kansas State staff, and Dr. Hobart Guerin, Ralston Purina Co., St. Louis, and Frank Jordan, Abilene, Kansas, veterinarian. Dr. M. J. Twiehaus, head of the Kansas State College veterinary pathology department, will be moderator.

C. H. (Jack) Blanke, Blair Milling & Elevator Co., Atchison, Kansas, will moderate a radio program by a committee of Kansas feed manufacturers and dealers. Participants include Don Geiser, Topeka (Kansas) Mill & Elevator Co.; Al Green, Naturich Mills, Abilene; John McKee, Key Milling Co., Clay Center, and Kenneth Winterscheidt, Winterscheidt Milling Corp., Seneca.

Moderating the various sessions will be Robert Guntert, Topeka, director of the feed and control division for the state board of agriculture; Dr. Charles L. Norton, head of Kansas State's department of dairy husbandry, and O. E. Case, Hutchinson, Kansas Grain & Feed Dealers Assn. Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., Kansas City, will give the conference "wrap-up."

The annual conference is sponsored by the state board of agriculture, Kansas Grain & Feed Dealers Assn., Kansas Formula Feed Manufacturers, the Midwest Feed Manufacturers Assn. and Kansas State College.

MINNESOTA

(Continued from page 7)

eggs (dry cleaned preferred, but washed acceptable if done correctly), vaccinated according to a prescribed program and fed a balanced ration which produces uniform egg color acceptable to the specific market.

"All it is is good management," an official said. "If the farmer believes he is meeting these requirements, we'll send out an inspector who will look over the premises and break out eggs."

Premiums

It was reported that producers under the program are getting a good acceptance at retail and at plants. They are being paid a premium generally, "but this will no doubt end soon," said Charles Combs, state supervisor of the program.

"It won't be long before the B producer is out," he said. "Top quality eggs will be standard, but the producer will be making more because he will be producing more top quality eggs."

Mr. Combs said demand for the state certified quality is growing. "We have had requests for 1,000 cases a week by one buyer, but producers aren't ready to meet that kind of volume."

Roy Munson, supervisor of the state poultry breeding program, said the small producer is finding something of value in the program.

"There is no reason why the small producer can't do as good a job as the big one," he said. "We run into trouble when we talk about efficiency. This way the small producer can't compete. But with the diversified farms we have in Minnesota, the small flock owner usually has family labor available or can fit in an egg program that isn't too big."

Mr. Munson said the program has two grades, the certified egg and grade A. In this way the producer who holds older hens still in good production can continue under the program.

Shortly after Jan. 1 the state will have seals which identify cartons of Minnesota certified eggs.

"The program is something we've needed in Minnesota for a long time," Mr. Munson said. "The state has about 75% surplus production and our producers now know they must have quality to find markets."

EGG PLAN

(Continued from page 7)

uniform yolk color acceptable to a specific trade."

An indication of the interest in the program is that less than one month ago the program had 20 producers and a daily output of about 52 cases. Mr. Roddis said another indication of the interest is the fact that "we haven't lost a producer yet."

The corporation pays 4¢ under New York market to the farmer and sells the certified eggs at 2¢ over New York market, primarily to retailers in the areas bounded by and adjacent to the areas served by the feed firms.

"Retailers who have been buying the eggs tell me their sales are going up," Mr. Roddis said. "If people can get quality, they're willing to pay for it."

He said local markets for the eggs are "opening up." Until the 100-case goal was reached, the corporation could not guarantee some retailers the volume wanted in a steady supply. That problem has now been surmounted.

The corporation has a building in Rochester, the largest city represented by the feed men, for processing the eggs. Seven employees handle the program. Pickups are made twice a week by a local trucker who has a contract with the corporation.

Present automatic grading facilities will grade and carton 350 doz. eggs an hour. New equipment has been ordered which will handle some 500 doz. eggs hourly.

Eggs are cartoned under the name Quality Eggs, Inc., or under the name of the buyer. When new seals of certified quality are made available by the state of Minnesota shortly after the start of the new year, these will also go on the cartons.

No financing is offered to the producer other than the normal limits of financing offered by the individual feed firms. Officers of the corporation said the producers want to "stay independent."

Brazil to Get U.S. Corn, Grain Sorghums

WASHINGTON—The U.S. Department of Agriculture has announced amendment of the agreement of Dec. 31, 1956, entered into between the U.S. and Brazil under Title I of PL 480 to provide for purchase of additional commodities.

The amended agreement provides for purchase of $2 million worth of corn, $1.7 million worth of grain sorghums, and an amount of dry edible beans to be determined on the basis of availability under the program of the quantities and classes desired.

Sales under this program will be made by private U.S. suppliers. Details of purchase authorizations will be given later, USDA announced.

Lower Spring But Higher Fall Cattle Prices Seen in '59

AMES, IOWA—Prices for finished cattle marketed this winter and spring probably won't be as high as they were a year ago, Prof. Francis Kutish, farm economist at Iowa State College, points out.

If a larger share of the year's slaughter of fed cattle is marketed in the first half of the year, next spring's prices won't be as high as a year ago, Prof. Kutish said. But the summer recovery should push the late summer and fall prices above those of the corresponding period in 1958.

One force that could upset this prospect would be dry weather over a sizeable proportion of the West, said Prof. Kutish. The dry weather would produce large marketings of cows and grass cattle next summer and fall.

Another development which might disrupt the predicted pattern would be an influx of hogs on the market next fall.

Supplies of fed cattle will be relatively large during the winter, causing a more normal price pattern than the one prevailing last year, said Prof. Kutish. There were 12% more cattle on feed Oct. 1 than there were at the same time a year ago.

Last winter, fed cattle supplies were scarce and the prices of finished cattle shot up sharply as a result. Prices peaked in March and were unusually high all through the spring.

A larger proportion of the cattle moving during the summer and fall this year were heavy feeder cattle. This, coupled with the increased number of cattle bought last spring and the general delay in feeding programs this year, provides prospects for more fed cattle on the market through the winter months than last year. The winter peak in prices is likely to come earlier than the March peak of a year ago, said Prof. Kutish.

Moorman Firm Grants $200,000 for Research

URBANA, ILL.—The University of Illinois College of Agriculture has accepted a $200,000 grant from the Moorman Manufacturing Co., Quincy, Ill., for long-range expansion of animal breeding research.

Dr. David D. Henry, president of the university, said the grant money would be used for buildings, equipment and facilities on a completely new research farm to be known as the MoorMan Animal Breeding Research Farm.

The university has for many years been interested in increasing its facilities for animal breeding research, the president pointed out, adding that it is to help satisfy this need that the Moorman company has made its funds available. The grant will enable the university to create the needed facilities to concentrate on the specialized problems of animal breeding theory and practice.

First units of this new breeding research facility will be planned primarily for swine research, the university president said. Later units will be designed and built for other classes of livestock. Each unit will be constructed to make best use of this completely new approach to scientific study of animal breeding problems.

This new research farm will include facilities to study swine housing, environment control, latest equipment and automatic management devices for ideal study conditions. It will be entirely separate from present university swine farm facilities. Plans presently include two purebred and three cross-bred swine herds to be raised for use in the studies.

Purina's "Champ" To Go Overseas

ST. LOUIS—"The Champ," a giant life-like steer made by the Ralston Purina Co. and mounted on a 30-ft. trailer as an exhibit of beef production, will become an international ambassador of American agriculture next month.

The U.S. government will take it over Jan. 19 to display it in major expositions in Italy and Spain. The huge replica of a Hereford steer has toured the U.S., Canada and Mexico during the past 2½ years to promote better understanding of the cattleman's business of producing beef.

Ezra Taft Benson, secretary of agriculture, will accept the exhibit from Ralston Purina on behalf of the government. It will be shipped to Italy early next year to begin its tour of foreign expositions as a part of the official American agricultural exhibit. The Champ's first exhibit is expected to be at an exposition in Rome early in March.

Visitors to the exhibit may walk through the steer's body and see replicas of vital organs at work making beef, producing milk, and developing an unborn calf from a 30-day to a nine-month embryo. An actual count shows that some 1.5 million people have walked through the exhibit during the past 2½ years.

The exhibit stands 12 ft. tall, 19 ft. long and nearly 8 ft. wide. It weighs 4,000 lb. without tractor and trailer.

Christmas Party Held By Chicago Feed Club

CHICAGO—An evening featuring a varied floor show, dinner, and many prizes, and attended by 325 members and guests was the annual Christmas party of the Chicago Feed Club held at the Germania Club Dec. 15.

Following the cocktail period and dinner, several door prizes, along with 15 canned hams, were distributed. The entertainment included Carman Lopez, a Spanish dancer; Jack Marshall, master of ceremonies and humorist; Toni LaRue, marimba player; Guili Guili, magician; the Chez Paree Adorables, and Benny Sharp and his orchestra.

Sharing in the applause for the party were Richard R. Glowe, D.C.A. & Co., program chairman; Ed DeLaet, St. Regis Paper Co., chairman of the house committee; John Mecking, J-M Trading Corp. and vice president of the club, in charge of arrangements, and Robert H. Griffiths, Allied Mills, Inc., club president.

MARKETS

(Continued from page 2)

on present feed costs, broiler producing operations still show a loss.

Feed mills report their running time is generally steady with a slight advance in prices, due to ingredient costs. The corn market in Georgia advanced 2¢ to 3¢ a bu. this week with very little being offered. Most mills are buying corn barged into Chattanooga, Tenn., or trucked out of Illinois and Indiana.

Many of the southeastern states have a floor tax on inventory as of Jan. 1, and most feed manufacturers are doing their best to reduce inventories and only buy cars as needed. Many believe that most of the major ingredients are bound to decline from present prices after the first of the year.

Cottonseed meal has been a scarce commodity for the last month, but many believe that after the first of the year there should be a fairly good seed movement to the mills. The basis for that is that the farmers

have received nice incomes for their commodities this year and are carrying over cottonseed and corn for tax purposes. Practically all of the citrus processors in Florida are now in operation, and the mills are beginning to accumulate some tonnages of pulp, and the ones which are running heavy and do not have storage space have reduced their prices as much as $10 per ton from the beginning of the season.

Central States

Feed manufacturers are finishing 1958 at a smashing pace. Reports indicate that some producers are enjoying a record sales volume during December, a period when the selling pace normally slows down for the holiday season. Some industry members indicate their backlogs are extending beyond the usual two or three days.

It is difficult to pinpoint one major factor which has influenced this boom on top of a boom, which probably assures that the current year will set an all-time high for the manufacture of formula feeds. Part of the credit is given to the cold weather, which has gripped the Midwest for the last two weeks. Another reason is the seeming desire of some farmers and feeders who have had a good profit year to get in a big inventory of feeds for year-end tax purposes.

Some orders have come in to get in under the wire before the next two weeks, which will see short production. Plants in this area generally plan to shut down at noon Dec. 24, remain closed Christmas day, and work only a skeleton force Dec. 26. The same plan is to be used for the New Year holiday.

South Central

Formula feed sales volume is holding at a high rate. Business is very good. Continued cold weather stepped up feed requirements to a level where mills are crowded to keep up with demand. Nearly all of the plants are operating six days with two shifts and some are adding two hours overtime to each shift.

There is a good deal of optimism over forward business prospects. Some temporary slowdowns are foreseen but no real setback is considered likely. Although some price resistance has been freely predicted, so far it has had little effect. December business is far ahead of a year ago.

The best outlet for feed is to hog raisers, who are using a surprising quantity. Cattle feeds are providing an important part of mill production. Egg mash deliveries have stepped up with the colder weather.

Ohio Valley

Demand for formula feeds reached record tonnages this week for the year to date as temperatures continued to range well below the zero mark for the second successive week. As a result, the sharply increased demand for many formula feeds created shortages in numerous ingredients, boosting prices well above those recorded earlier this month.

Fortunately, there was a minimum of snowfall in the area, but the extremely cold weather hindered processing operations and delayed deliveries of ingredients to all manufacturing plants. This caused a buildup of orders that created delivery backlogs far beyond those experienced previously this year.

This situation is indicated by the increase in quotations such as cottonseed oil meal up $1 ton, hominy, bran and middlings up $1.50; corn oil meal up $2, and tankage up $1.50. Meat and bone meal increased $10 ton and steamed bone meal was up $15.

While ample supplies of farm crops were more than adequate for feedings under normal weather conditions, these supplies were becoming rapidly depleted during the last two weeks, and it is now evident that continuance of the cold weather during the remainder of the winter season will develop a demand far beyond expectations of a month ago, especially in view of the seasonal inventory buildup for tax purposes.

Deliveries of cattle to area stockyards have been cut considerably by the cold weather and, as a result, prices have held steady to higher.

Mountain States

It is the general opinion of feed mill representatives in this area that the sales volume of formula feeds in the past week is steady compared to the week before, but well up from the same time a year ago.

The feed lot supplements are getting the most demand. This is due to an increase in cattle and sheep in feed lots. Most of the formula feeds are going for immediate sale by the dealers.

Pacific Northwest

Feed ingredient prices made some further advances during the week's Pacific Northwest market trading which featured a moderately active demand and further tightening in the supply of some important items for nearby shipment.

Trade sources indicated that feeding operations were heavy and most terminal mills have anticipated needs for the next 30 to 60 days.

Prices for all ingredients with the exception of whole corn and barley ranged from fully steady to stronger.

Whole milo, soybean meal and wheat millfeeds posted the sharpest price advances with cottonseed and copra meals following.

Portland and Seattle mixers reported that formula feed sales were fully maintained at last week's volume with buyers protecting inventories through January in most cases.

Wheat millfeed listings advanced $2 to $3 ton while quotations for soybean and milo were up $1.50 ton with cottonseed meal values unchanged to $1 above those of one week ago.

Quotations for whole corn and barley declined as much as 50¢ ton.

With wintry weather prevailing over the entire Pacific Northwest, extremely tight supplies of wheat feeds, soybean meal, milo and cottonseed meal for prompt shipment appeared to be the important price strengthening factor.

INDEX OF ADVERTISERS

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Abbott Laboratories 20, 21
Agricon, Inc. .....
Agri-Tech, Inc. 25, 46, 59, 77
Albers Milling Co. .....
Albumina Supply Co. 58
Allied Chemical Corporation, Nitrogen Division 46
Allied Mills, Inc. .....
Amburgo Co., Inc. .....
American Agri. Chemical Co.
American Cyanamid Co. 17
American Dehydrators Assn...
American Elev. & Grain Div.
American Mill Serv. Co. ...
American Poultry & Hatchery Fed. .....
Anderson Box Co. 64
Andersons, The .....
Anderson, V. D., Co. 22
Arbor Acres Farm 46
Archer-Daniels-Midland Co. ..
Arkansas Rice Growers Coop. Assn. .....
Arkell & Smiths .....
Armour & Co. 61
Armstrong, O. B., & Son ...
Aubrey Feed Mills .....

Babcock Poultry Farm, Inc. ..
Bacon, Edward R., Grain Co..
Baker, H. J., & Bro. .....
Baker, J. T., Chem. Co. ...
Barnard & Leas Mfg. Co., Inc. 50
Baroid Division, National Lead Co. .....
Bartlett, C. O., & Snow Co.. 34
Barton Salt Co., The .....
Bates Grain Co. .....
Baughman Mfg. Co., Inc...
Baxter, A. E., Engineering Co.
Bayou Molasses Co. 67
Beardstown Mills .....
Bemis Bro. Bag Co. .....
Berg, Paul .....
Bigelow Sales Co. 83
Bingman Lab., Inc. 56
Black, Sivalls & Bryson, Inc...
Blatchford Calf Meal Co. .. 79
Blomfield-Swanson .....
Borden Company 53
Bosworth Commission Co. ....
Bowman Feed Prod., Inc. ... 14
Brewers Yeast Council, Inc. .
Brower Manufacturing Co. .. 21
Brown, Fred G., Pulv. Co. ..
Bruce Milling Co. .....
Burrell, James H., & Co., Inc. 66
Burrows Equipment Co. 79
Burrus Feed Mills 9
Butler Chemical Co. 28
Butler Mfg. Co. .....

C-K Processing Co. 60
Calcium Carbonate Co. .....
California Pellet Mill Co. ... 42
Caple, A. B., Co. .....
Carey Grain Corp. .....
Cargill, Inc. 55
Carson Food Co. .....
Champion Portable Mill Co.. 74
Chantland Mfg. Co. .....
Chase Bag Co. 38
Checkerboard Grain Co. 84
Citrus Processors Assn. .....
Cleveland Vibrator Co., The..
Clinton Corn Processing Co...
Clofine, Herbert K. .....
Colby Milling, Inc. .....
Collier Livestock-Feeder Co...
Colonial Poultry Farms .....
Columbia Phosphate Co. 77
Columbia Quarry Co. 58
Columbian Steel Tank Co. ..
Commercial Solvents Corp. ..
Consolidated Blenders, Inc. .. 37
Consumers Soybean Mills ....
Continental Grain Co. 83
Corn Products Sales Co. ...
Coronet Phosphate Co. ....
Cottingham & Butler Ins. Service, Inc. .....
Crete Mills .....
Cromwell Paper Co. 34
Crown Zellerbach Corp. ....
Czarnikow Rionda .....

D. C. A. & Co. .....
Daffin Mfg. Co. .....
Dannen Mills, Inc. 60
Davis, H. C., Sons' Mfg. Co.
Dawe's Laboratories, Inc...29, 57
Day Company, The .....
Daycom, Inc. 71
Delaware Poultry Laboratories
Devold, Peder, Oil Co. .....
Diamond V Mills, Inc. .....
Distillation Products Industries 35
Distillers Feed Research Council .....
Doane Agricultural Service ..
Dorsey Trailers 80
Doty Laboratories 54
Douglas Chemical Co. 48
Duplex Mill & Mfg. Co. 59
Du Pont de Nemours & Co., Inc., E. I. 51

Early & Daniel Co. .....
Eastern Stock Food Co. 79
Eastman Chemical Prod., Inc. 32
Ehrsam, J. B., & Sons Mfg. Co., The 40
Elam Grain Co. .....
Eriez Mfg. Co. .....
Eschenheimer, Rudy, Co. 72
Eshelman, John W., & Sons..
Ewing, Ray, Co. 70

Farm Journal .....
Farmers Friend Mineral Co... 64
Farmers Mutual Hail Ins. Co. of Iowa .....
Farmers Union Grain Terminal Assn. .....
Feed Service Corp. .....
Fischbein, Dave, Co. .....
Flavor Corp. of America ... 72
Flour Mills of America .....
Food Mach. & Chem. Corp...
Forster Mfg. Co. 49
Fox Co. 69
Fruen Milling Co. 7

Gaddis Bros. Mfg. Co. .....
Geerlings Feed Mills 41
Gerber Sheet Metal .....
Glidden Co., The .....
Gorton-Pew Fisheries 84
Grace Chemical Co .....
Grain Processing Corp. 70
Grand River Chem. .....
Griffith Labs., Inc. .....
Gump, B. F., Co. .....

Hallet & Carey Co. .....
Hand, Peter, Foundation 3
Hardy, H. E., & Co. .....
Hardy Salt Co. .....
Harris-Crane, Inc. .....
Harris Lab. .....
Harshaw Chemical Co. .....
Hawthorne Co. .....
Hayes and Stolz .....
Haynie Menhaden Prod., Inc.
Heard-Kinard-Smith, Inc. ...
Heck, Edward J., & Sons Co.
Heil Co., The .....
Helm Manufacturing Co. ....
Henderson Mfg. Co. .....
Henke Mfg. Co. 60
Hercules Powder Co. .....
Hess & Clark, Inc. .....
Heterochemical Corp. 11
Highway Equipment Co. ....
Hilltop Laboratories 54
Hoffmann-La Roche, Inc. ....
Hoffman-Taff, Inc. 77
Hogenson Const. Co. 74
Hogg, N. D., Ltd. .....
Holt Products Co. .....
Homer Mfg. Co., Inc., The..
Honeggers' & Co. 16
Honeymead Products Co. ....
Hot Spot Detectors, Inc. ....
Howes, S., Co. Inc. .....
Hubbard Milling Co. .....
Hudson Pulp & Paper .....
Hubbell, Charles H. .....
Hygeno Litter Co. 61
Hyline Poultry Farms .....

Ibberson, T. E., Co. .....
Illinois Soy Products Co. 70
Industrial Commodity Corp..
International Harvester Co. ..
International Machinery Dev. Corp. .....
International Minerals & Chemical Corp. 23
International Paper Co. .....
International Salt Co., Inc... 24
Interstate Chemical Products.
Iowa Limestone Co. .....
Iowa Portable Mill Co. .....

Jackson, Gilbert, Co., Inc. .. 46
Jacobson Machine Works ... 15
James Mfg. Co. .....
Jefferson Chemical Co. .....
Jersee Co. 49
Johns-Manville 36
Jones-Hettelsater Const. Co...

Kansas Soya Prod. Co., Inc... 40
Kees & Company 74
Kellogg, Spencer, & Sons, Inc.
Kem Mfg. Co. .....
Kemp, C. M., Mfg. Co. .....
Kent Feeds .....
Kent, Percy, Bag Co., Inc... 54
Key Alfalfa Dehydrators ....
Keystone Steel & Wire Co. ..
Kilby Steel Co. .....
Kindstrom-Schmoll Co. .....
Koelsch, Charles J., Grain Co.
Koppers Co., Inc. .....
Kraft Bag Corp. .....
Kraft Foods Co. 64
Kuss, R. L., & Co., Inc.....

Laboratory Construction Co...
LaBudde Feed & Grain Co... 25
Lakeland Eng. Eqpt. Co. ...
Land O'Lakes Creameries, Inc.
Landers Mill Mfg. Co. .....
Lathrop's Hatchery, Inc. ....
Lauhoff Grain Co. .....
Leach Mfg. Co. 65
Leftwich, J. H., & Co., Inc... 40
LeGear, Dr., Inc. .....
Lennox Industries, Inc. .....
Levens Mfg. Co. .....
Lilly, Eli, & Co. 69
Lima Armature Works .....
Limestone Products Corp. of America 31
Loncala Phosphate Co. 38
Longhorn Eng. Co. .....

McCabe Grain Co., Ltd. .....
McCall, Tom, & Associates, Inc. .....
Magnus, Mabee & Reynard..
Maney Bros. Mill & Elev. Co. 84
Manganese Chemical Corp..
Marco Chemical Co. 71
Martenis, C. J., Grain Co....
Martin, Theo. W., & Son ...
Mathews Co. 60
Mayo Shell Corp. 14
Merchants Chemical Co., Inc.
Merck & Co. .....
Mid-America Mlg. Co. 56
Mid-Continent Grain Co. 49
Midland Western .....
Midwest Alfalfa Co. 44
Midwest Dried Milk Co. ....
Milbrew Co. .....
Mill & Elevator Co. .....
Miller Manufacturing Co. ...
Miller, Mel, & Co., Inc. 28
Miller, Publishing Co., The ...
Minneapolis Sewing Mach. Co.
Minnesota Linseed Oil Co. ... 62
Minnesota Specialty Co., Inc.
Monsanto Chemical Co. 75
Mooers Mfg. Co. .....
Motomco, Inc. .....
Morton Salt Co. 45
Murphy Products Co. .....
Myers-Sherman Co. .....

Nagel, Herman, Co. 36
Natl. Alfalfa Dehydrating & Mlg. Co. 88
Natl. Distillers Prod. Co. 59
National Feed Ingred. Assn...
National Lead Co. .....
National Molasses Co. .....
National Renderers Assn. 63
National Turkey Federation Underwriters .....
National Vitamin Products Co.
Nellis Feed Co. 49
New Century Co., The .....
New England By-Prod. Corp.. 84
Nichols, Incorporated .....
Nootbaar, H. V., & Co. .....
Nopco Chemical Co. 67
North American Mfg. Co. ...
North American Trading & Import Co. 47
North Carolina Granite Corp. 46
Northwest Brewers Yeast, Inc.
Nor-Vell, Inc. .....
Nutrena Mills, Inc. 55

Oakes Mfg. Co. .....
Olavarria & Co., Inc. .....
Oyster Shell Corp. 38
Oyster Shell Prod. Co. 72

Pabst Brewing Co. 12, 13
Panogen, Inc. .....
Paper-Calmenson & Co. .....
Park, Philip R., Inc. .....
Parks, J. P., Co. .....
Parrish & Heimbecker 20
Parrish, N. K. .....
Paxton Processing Co. 79
Pay Way Feed Mills, Inc. 10
Peavey, F. H., & Co. 74
Peerless Equip. Co., Inc. 36
Permco Mfg. Co. .....
Peterson Sales, Inc. .....
Pfizer, Chas., & Co. .....
Phelps Dodge Refining Corp.
Pillsbury Co., The .....
Pittsburgh Plate Glass Co. .. 36
Pless & Sheahan .....
Power Curve Conveyor Co...
Prater Pulverizer Co. 66
Pratt Labs., Inc. .....
Productive Acres Mfg. Co. .. 59
Publicker Industries, Inc. ...

Quaker Oats Co. 19
Quisenberry Mills .....

Ralston Purina Co. 33
Rapids Machinery Co. 56
Raymond Bag Corporation .. 73
Read, Gladwin A., Co. .....
Red River Alfalfa Co. .....
Red Star Yeast & Prod. Co...
Rees Blow Pipe Mfg. Co. ...
Reliance Feed Co. 74
Rhodia, Inc. .....
Richardson, James, & Sons...
Richardson Scale Co. 68
Riley Feed Co. 51
Rion Crush Stone Corp. 66
Ripco, Inc. .....
River Rest Turkey Sales, Inc.
Robinson Conveyor Systems..
Rohloff Bros., Inc. .....
Rolfes Grain Aeration Cos...
Roskamp Huller Mfg. Co., Inc.
Rosner-Hixson Laboratories ..
Ross Machine & Mill Supply..
Ross Mfg. Co. .....
Ryde & Co. .....

S. & H. Lab. 56
S & O Products .....
St. Regis Paper Co. .....
Salsbury's, Dr., Labs. 43
Save-Way Feed Mills 68
Scanlan, Ivan, & Co. .....
Schenley Distillers, Inc. 76
Schuster-Wise Gr. & Feed Co.
Schutte Pulverizer Co., Inc... 11
Scroggins Grain Co. 77
Seagram, Joseph E., & Sons, Inc. .....
Seco, Inc. .....
Seagram, Joseph E., & Seedburo Equipment Co. 16
Service Bureau Corp. .....
Sheahan, Robert F. .....
Shell Chemical Co. .....
Shellbuilder Co. 54
Shuford, J. C. 44
Sievert, C. W., & Associates
Simonsen Mfg. Co. 63
Sioux Products .....
Small, The W. J., Co. 5
Smith, Edward E., & Co. .....
Soft Phosphate Research Inst.
Sohio Chemical Co. .....
Soluble Nutrients, Inc. .....
Southwest Mill Supply Co. ... 79
Sparks-Waters-Farnen, Inc. ..
Special Products, Inc. .....
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc.
Sprout, Waldron & Co., Inc. 25
Squibb, E. R., & Sons .....
Stabilized Vitamins, Inc. ....
Staley, A. E., Mfg. Co. .....
Staley Milling Co. .....
Standard Brands, Inc...51, 63, 79
Standard Feed & Fert., Inc...
Stauffer Chemical Co. .....
Stearns Magnetic Products ..
Stephens-Adamson Mfg. Co...
Sterwin Chemicals Inc. 39
Stone Mountain Grit Co. ....
Strong-Scott Mfg. Co. .....
Sudenga Industries .....
Sunset Feed & Grain Co. ....
Superior Feed Co. .....
Swanson, Carroll, Sales Co... 20
Swift & Co. .....
Syntha Lab. .....

T. D. F. Company .....
Taste Engineering, Inc. 7
Texas Mill Equipment Co. ... 46
Thayer Scale Corp. .....
Thomer Equipment Co. .....
Thompson Printing Co. .....
Ti-Co Industries .....
Tobias Enterprises 54
Toxite Laboratories 64
Truck Grain Blower Co. .....

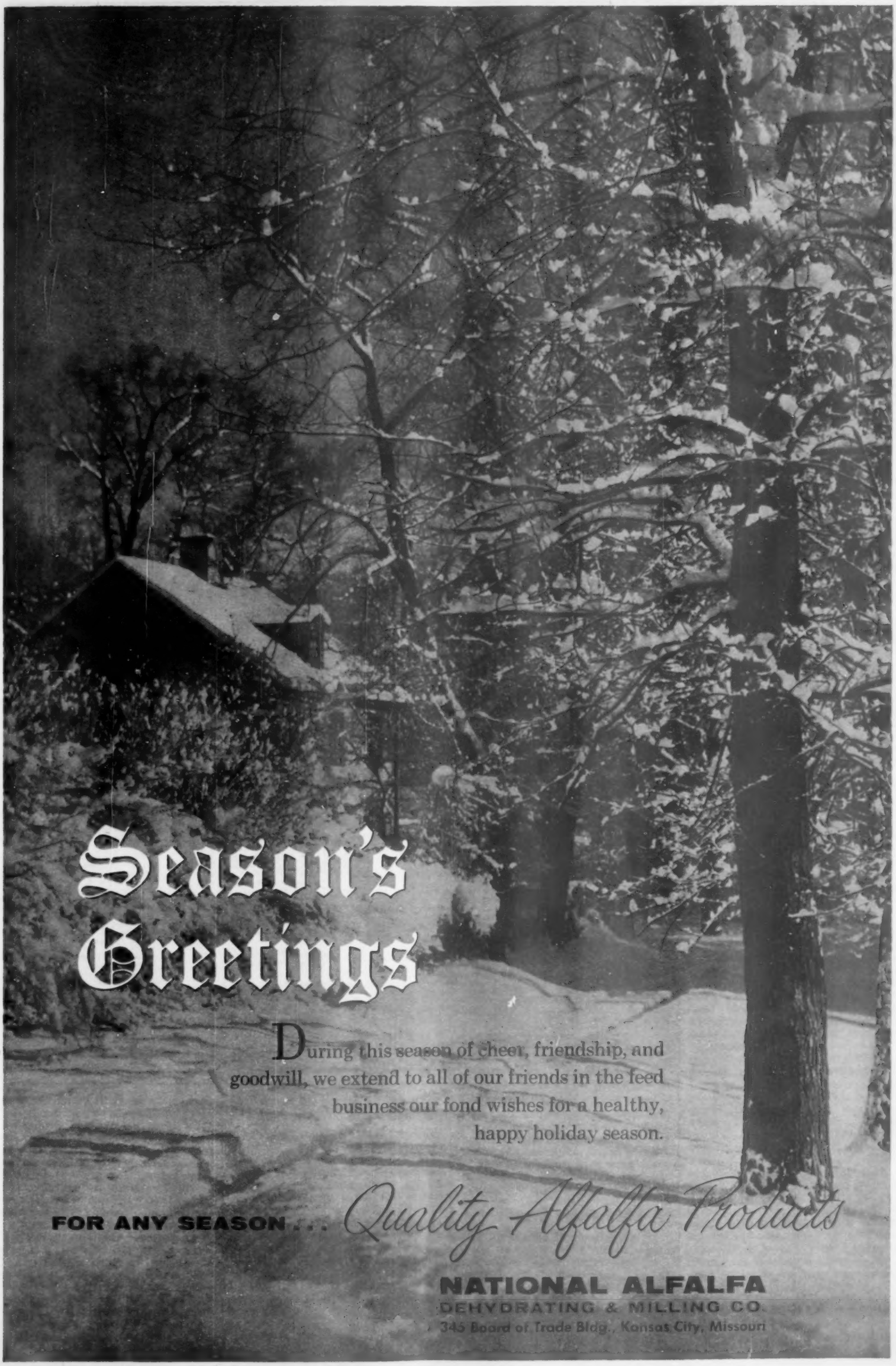
Ultra-Life Laboratories, Inc. .. 58
Union Bag-Camp Paper Corp. 63
Union Special Machine Co...
U. S. Industrial Chem. Co. ..
Universal Hoist Co. 52
Upjohn Company, The .....

Van Dusen Harrington Co. ... 74
Vantress, Chas., Farms, Inc...
Vitamins, Inc. 74
Vitaway, Inc. .....
Vitren Corp. .....
Vy Lactos Laboratories, Inc.. 16

W-W Grinder Corporation .. 42
Wallace & Tiernan Inc. .....
Warren-Douglas Chemical Co. 38
Wells, Ralph, & Co. .....
Wenger Mixer Mfg. Co. 31
Wertz Feed Co. 42
Western Condensing Co. .....
Western Yeast Co. .....
West Virginia Pulp & Paper Co. 27
White Laboratories, Inc. .....
White Shell Corp. .....
Whitmoyer Laboratories, Inc. 25
Whitten Co. .....
Wilhoit Laboratory 25
Wilson & Co., Inc. .....
Wilson, R. S., Co. 11
Wirthmore Feeds 22
Wisconsin Alumni Research Foundation 76
Woodward & Dickerson, Inc. 52

Younglove Construction Co...
Young, John F., Co. 32

Zellers' Laboratories .....


Season's
Greetings
During this season of cheer, friendship, and goodwill, we extend to all of our friends in the feed business our fond wishes for a healthy, happy holiday season.
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